

AMERICAN GAS ASSOCIATION MONTHLY

NOVEMBER · 1934

Large Registration at Convention

The Gas Industry Today H. O. CASTER

Standby Gas

L. J. WILLIEN

**Performance and Sale of Gas Arc
Lamps**

J. FRANK JONES



The A.G.A. Rate Service

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1. Complete gas rate schedules in effect for practically every community in the United States and its Possessions, Canada and Newfoundland, together with data on kind and heating value of gas supplied.
2. Complete list of gas companies with names of communities supplied by each company.
3. List of gas companies having special rates for water heating.
4. List of gas companies having special rates for house heating.
5. A tabulation showing all communities in which therm rates are now in effect and the names of companies serving these communities.

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AMERICAN GAS ASSOCIATION MONTHLY

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PERCY S. YOUNG, who was elected president of the American Gas Association at the Sixteenth Annual Convention. Mr. Young is vice-president of the Public Service Electric and Gas Company, Newark, N. J.

AMERICAN GAS ASSOCIATION MONTHLY

James M. Beall, Editor

Large Registration, Impressive Exhibit Mark Convention Opening

ATLANTIC CITY, N. J., Oct. 30.—Clear skies, a registration today of 3,470, with a strong possibility that it will reach, if not exceed, 4,000* by tomorrow, an exhibition of surpassing beauty and unparalleled interest, and a general atmosphere of well-being pervading the whole—these are some first hand, early impressions of the Association's Sixteenth Annual Convention now in session here.

Standing on the balcony of the great exhibition hall of the Atlantic City Auditorium today at 1 p.m., there lay stretched out below twelve lanes of individual exhibits of appliances and apparatus, the colors as diverse as those of the rainbow. The first meeting of general sessions today started promptly on the minute and adjournment was taken at 11:25 a.m., affording ample time for the several hundred delegates in attendance at that meeting to visit the exhibition. At 1 p.m. some 1,500 visitors were to be seen in the exhibit hall, each one of the 160 or more exhibits having groups of from five to twenty interested individuals gathered around the products on display.

Publicized months ago as the outstanding attraction of this year's convention, the exhibition has not only met this expectation, but has far exceeded it. Old-timers whose annual visit to the exhibition has become a fixed habit, declare, as a man, that this year's show features more new and

revolutionary improvements than any of its predecessors, and some of them have been noteworthy in this respect. Much talk has been heard since the 1931 exhibit that a gas convention without the manufacturers in attendance is a dull affair indeed. This year's exhibition makes that statement truer than ever. That the exhibition has a powerful stimulating effect upon

prevailing sentiment at a convention of gas men cannot be denied.

Business sessions of the convention got under way late Sunday afternoon with meetings of the main technical and research committee of the Natural Gas Department, and of the Manufacturers' Section and Gas Appliances Institute. These meetings were well attended, and the manufacturers were present in large numbers to hear Chairman Fry deliver his annual report and to learn of possibilities existing in the government's home modernization program from George Bean, the Association's fuel consultant at Washington, and Louis J. Alber, of the speakers' bureau of the Federal Housing Administration.

Members of the Natural Gas Department held morning and afternoon meetings yesterday, the outstanding feature being the address of Frank L. Chase, Chairman of the Department. Stating that increased costs of operation under the NRA, without any corresponding increase of revenue, may force the natural gas utility companies to raise their rates, Mr. Chase said that such action may add to the intensity of the anti-utility sentiment that seems to be gathering force in so many directions and to have encouragement from high places in our municipal, state, and national government; or it may possibly result in a dawning consciousness on the part of the public that their utilities are entitled to better treatment than they have been receiving.

New Officers

President—P. S. Young, Vice-President, Public Service Electric and Gas Company, Newark, N. J.

Vice-President—I. B. Denning, President, Lone Star Gas Company, Dallas, Texas.

Directors—Two-Year Terms:

Addison B. Day, President and General Manager, Los Angeles Gas and Electric Corp., Los Angeles, Calif.; B. J. Denman, Vice-President and General Manager, The United Light and Power Co., Chicago, Ill.; Henry L. Doherty, President, H. L. Doherty & Company, New York, N. Y.; O. H. Fogg, Vice-President, Consolidated Gas Co. of New York, New York, N. Y.; Arthur Hewitt, Vice-President and General Manager, Consumers Gas Company of Toronto, Toronto, Ontario, Canada; N. C. McGowen, President, United Gas Public Service Company, Houston, Texas; William T. Rasch, President, American Gas Products Corporation, New York, N. Y.; Thomas E. Roach, Vice-President and General Manager, Washington Gas and Electric Co., Tacoma, Wash.; W. Frank Roberts, President, Standard Gas Equipment Corp., Baltimore, Md.

* Final registration, 4583.

New Chairmen

NATURAL GAS DEPARTMENT: Chairman—John B. Tonkin, President, The Peoples Natural Gas Co., Pittsburgh, Pa.; Vice-Chairman—William Moeller, Jr., Vice-President, Southern California Gas Co., Los Angeles, Calif.

ACCOUNTING SECTION: Chairman—A. S. Corson, General Auditor, The United Gas Improvement Company, Philadelphia, Pa.; Vice-Chairman—F. L. Griffith, Vice-President, The Peoples Gas Light and Coke Co., Chicago, Ill.

COMMERCIAL SECTION: Chairman—F. M. Rosenkrans, New Business Manager, Gas Service Co., Kansas City, Mo.; Vice-Chairman—C. E. Bennett, President, Binghamton Gas Works, Binghamton, N. Y.

INDUSTRIAL GAS SECTION: Chairman—J. F. Quinn, Supervisor, Industrial Gas Sales, The Brooklyn Union Gas Co., Brooklyn, N. Y.; Vice-Chairman—C. W. Gale, Superintendent, Commercial and Industrial Gas Departments, Public Service Company of Colorado, Denver, Colo.

MANUFACTURERS' SECTION: Chairman—John A. Fry, Vice-President and Secretary, Detroit-Michigan Stove Co., Detroit, Mich.; Vice-Chairman, Apparatus Division—Merrill N. Davis, Vice-President in Charge of Sales, S. R. Dresser Manufacturing Company, Bradford, Pa.; Vice-Chairman, Appliance Division—J. Scott Fowler, President, Lovekin Water Heater Co., Philadelphia, Pa.

TECHNICAL SECTION: Chairman—C. A. Harrison, Gas Engineer, H. L. Doherty & Co., New York, N. Y.; Vice-Chairman—F. A. Lydecker, General Superintendent of Gas Distribution, Public Service Electric and Gas Company, Newark, N. J.

PUBLICITY AND ADVERTISING COMMITTEE: Chairman—Henry Obermeyer, Assistant to Vice-President, Consolidated Gas Company of New York, New York, N. Y.

Commenting on municipal ownership, Mr. Chase declared it is well known to those in the utility industry that such ideas are almost wholly developed and fostered, not by those prompted by altruistic motives, but by those maliciously attempting to use such ideas for their political advantage. The speaker was enthusiastically applauded for his appointed and forthright address. The Natural Gas Department brought its meeting to a close at a dinner of the Executive, Managing and Advisory Committees at the Ambassador Hotel last evening.

Entertainment

The first of the convention's entertainment features was held last night in the Auditorium. The band of the Washington Gas Light Company of Washington, D. C., composed of sixty employees from that organization, marched down the boardwalk at eight o'clock and entered the exhibit hall of the Auditorium where they rendered an hour's concert. Miss Dorothy Reddish, soprano soloist, and J. J. Maughn, cornetist, contributed several effective selections to the accompaniment of the band. The exhibition was thrown open to the public, and an unofficial guess is that some 3,000 persons toured the big display of appliances and apparatus and enjoyed the band concert.

Following this feature came Natural

Gas Night in the Auditorium Ballroom. Six boxing bouts, a plentiful supply of stogies, and music furnished by the Pennsylvania Railroad Keystone Quartet and the Washington Gas Light Company Band rounded out two and one-half hours of entertainment.

Business Meetings

Today's business meetings started with general sessions, at ten o'clock, at which President Caster, Managing Director Forward, and Clifford E. Paige, of The Brooklyn Union Gas Co., contributed addresses. In his usual aggressive manner Judge Caster pointed out the danger existing in the government's Tennessee Valley program.

Mr. Caster said the standing of state regulatory bodies has been injured by misleading and false propaganda of municipal ownership advocates and others desiring to centralize all governmental power in the national capitol.

"These advocates" he declared, "have failed in their attempts to convince the residents of most communities that municipal plants are preferable to privately owned and operated plants regulated by state bodies, and have appealed to Congress.

The Federal Government denies that the Tennessee Valley Authority is subject to state control, which means

that, regardless of the desire of the citizens of any community or state, and in violation of state laws, the Tennessee Valley Authority can build plants and furnish service at whatsoever prices it chooses to charge. For instance, it can go into the Tennessee Valley and sell electricity at a price below the cost of production, or even give it away, thereby ruining not only the electric companies in that area, but also the gas companies in the communities affected, and this it is now threatening to do."

Judge Caster's address is reproduced in full in this issue.

Association's Work

Describing the Association's work for the past year, Major Forward took occasion to comment on the Tennessee Valley program, and the home modernization program sponsored by the Federal Housing Administration. His address appears elsewhere in this issue.

As this is being written, the first sessions of the Accounting, Commercial, Industrial Gas, and Technical Sections are being held. The attendance at all of these meetings is larger than it has been in three years. To meet the publication date of this issue of THE MONTHLY we are obliged to stop at this point.

PERCY S. YOUNG

PERCY S. YOUNG, new president of the American Gas Association, is a vice-president of Public Service Electric and Gas Company, Newark, N. J. He first became associated with public utility work in 1890, when he entered the employ of the Omaha Gas Company as collector. The Omaha Gas Company was controlled by The United Gas Improvement Company, and in 1895 Mr. Young was employed as a traveling auditor by that company, with headquarters in Philadelphia.

In 1898 he was made assistant agent of the Jersey City office of The United Gas Improvement Company, which was lessee of several of the gas companies in Jersey City, N. J. In 1899 they were merged into the Hudson County Gas Company of which he became assistant treasurer and later secretary. In 1903, Public Service Corporation of New Jersey was formed and Mr. Young was made comptroller. In 1914, he was made treasurer and in 1917, vice-president.

Mr. Young has been active in national utility association work for many years. He has been a member of the Executive Board of the American Gas Association

for four years and for the past year has been vice-president of the Association. He is a past president of the National Commercial Gas Association and of the Eastern States Gas Conference. Back in the late 'nineties Mr. Young was a member of the practical class taught by correspondence under the direction of the Trustees-Gas Educational Fund of the American Gas Light Association, of which Dr. Walton Clark was chairman.

Mr. Young is a director of Public Service Corporation of New Jersey and its subsidiary companies, of which Public Service Electric and Gas Company is one; also of United Engineers and Constructors, Inc., Fidelity Union Trust Company, and Firemen's Insurance Company of Newark, N. J. He is a member of the Council of New York University, from which University he received the degree of Bachelor of Commercial Science in 1908.

L. B. DENNING



L. B. DENNING, who was elected vice-president of the American Gas Association at the annual convention, is president of the Lone Star Gas Corporation. He was born near Greensburg, Indiana. As a boy he knew the hardships that go with life on a small farm. In early boyhood he went to Cincinnati where he entered the railroad service as a car checker in the railroad yards, and later as a lumber clerk. He continued in railroad work with the Big Four, the Baltimore & Ohio Southwestern, and the Cincinnati, Hamilton & Dayton until March, 1901.

While a railroad workman he studied law at night, and was admitted to the bar at Columbus, Ohio, in 1899. He started practice in a small town in southern Ohio, and became associated with natural gas interests as attorney in 1902. In 1910

he became general counsel for the Ohio Fuel Supply Company, and in 1918 was vice-president of this company in charge of distribution. Later he became vice-president and general manager of Fayette County Gas Company, operating in western Pennsylvania; and then secretary and treasurer of Northwestern Ohio Natural Gas Company, owning pipe lines supplying Toledo, Ohio. For several years he was secretary and treasurer of Tropical Oil Company and assistant secretary and treasurer of Penn-Mex Fuel Company.

In 1921 he was made president of the

Natural Gas Association of America. He was a member of the National Committee on Natural Gas Conservation during the administration of President Wilson.

A member of the first Board of Directors of Lone Star Gas Company, he has served as director since its organization. In May, 1915, he was elected president of Lone Star Gas Company and has served in that capacity continuously to the present time. Mr. Denning's contact with the natural gas business covers a period of over thirty years in most of the natural gas producing areas of the country.

TVA Resolution

The Gas Industry at Its Annual Convention Adopted the Following Resolution:

RESOLVED: The activities of the Tennessee Valley Authority, in employing the credit, the taxing power and the prestige of the Federal Government to foster the public generation, transmission and distribution of electricity constitute a serious threat to the economic stability of the gas industry.

For many years the industry has rendered a necessary and useful public service in the sale of both manufactured and natural gas. It now employs approximately 120,000 workers, having maintained the highest ratio of employment of any major industry through these years of depression. Five billions of the savings of our citizens are invested in its plants and facilities. Although its return on its capital has been relatively low, it, nevertheless, has maintained a high standard of public service. For many years its functions have been regulated by the public utility commissions of the several states. It believes that in operating under public regulation the industry in common justice is entitled to demand that it be not destroyed by the hands of public authority.

During its entire life it has met and surmounted the severe competition of other fuels and sources of energy, such as coal, wood, oil and electricity. Even in the face of reduced revenues and the rapidly mounting fuel and labor costs that have resulted from the national recovery program, it expects to continue to meet normal competition and serve its public on an increasing scale.

When, however, the Federal Government destroys the established competitive balance by such artificial programs as that of the Tennessee Valley Authority, a grave injustice is done. The electric rates proposed by the Tennessee Valley Authority, are contingent upon its ability to sell electricity to the average householder in vastly greater quantities than the national average experience has heretofore demonstrated to be possible. To do this it will be necessary to employ promotional methods which will

induce domestic customers generally to substitute electricity for gas in the operation of kitchen ranges, refrigerators, hot water heaters and other domestic appliances. This new business will inevitably come out of the pockets of established gas companies, in most cases to the detriment of the consumers.

The Tennessee Valley Authority program of electric development is founded on use of government funds—to which the gas industry itself is a large contributor. The Tennessee Valley Authority is free from the heavy tax burdens that private utilities must bear and escapes most, if not all, of the costs and limitations imposed by regulatory bodies. The Tennessee Valley Authority does not have to comply with many parts of the Government's recovery measures. It enjoys the co-operation of other agencies of government in loans and grants to extend the scope of its electric markets. Finally, it has the backing of Federal credit in the promotion and financing of electric appliances and is supported by the powerful prestige of the Government of the United States.

Such competition is unjust and unfair. It is punitive in nature and is not based on sound business principles. It violates the avowed purpose of the Tennessee Valley Act itself, to foster "an orderly and proper physical, economic and social development" of the area. If carried out as announced and if extended to other areas, it will result in grave injury to the gas industry, its workers, investors and consumers.

Therefore, this convention of the American Gas Association instructs its officers and directors that they take all necessary and convenient measures to bring the true facts of this serious situation before all proper officials of government and before the American public; and that they endeavor to secure the restriction of the Tennessee Valley Authority, or any other similar public programs, within fair, normal and economic competitive limits and so prevent undue injury to the gas industry.



The 1934 Exhibition—An inspiration to 4583 registered delegates

High Lights of Convention Addresses

During the past several years the natural gas industry has grown rapidly and as soon as the flow of capital into new ventures is resumed the growth will continue at an even faster pace.

—F. W. Peters

The gas companies can and should go further than cooperation with dealers. They should provide a group of trained men to contact the commercial field, or the user, if they want to develop retail industrial gas sales to the maximum.

—H. A. Sutton

The utilities can either, through indifference, permit competitive fuels to gain a considerable headway in the baking industry, and threaten the supremacy that gas now possesses; or they can, through intelligent and effective defensive measures, protect this load and insure its retention as a valuable asset to our industry.

—F. H. Trembley, Jr.

The lamps (the new super-power gas lamps) are taking between 60 and 70 cu.ft. of 550 B.t.u. gas per hour. All night service stations are averaging around 15,000 cu.ft. per lamp per month. This is a lamp consumption equal to a small house-heating job, and all non-peak business.

—W. M. Blinks

As long as gas appliances can be sold at a good margin of profit; as long as the public can be led to demand good equipment and pay a fair price for it, we need have little fear of restrictions of sales outlets for gas using appliances.

—F. M. Banks

We are beginning to look upon househeating as a nine months' load with a profitable return, rather than a load that produces only peaks that surely will break the back of the plant and distributing system.

—Victor Starzenski

We feel we can compete with the TVA for the business which we feel we are justly entitled to have without entering into any arguments. However, we do not expect to sit idly by and let them or anybody else take our business away if we can help it.

—H. G. Bonner

What are we doing to combat TVA electric competition? We are doing just what has always been done under competitive conditions, namely: Analyze existing conditions, improve what we have to offer, sell it. Our only difference is that we must do more of it.

—W. E. Leverette

Our industry has reached a point today where if we are to continue to exist we must sell gas not only for cooking, but for water heating, auxiliary heating and space heating to a market where the family income is about \$1,500 or less a year.

—H. E. Dexter

The gas industry is in a position where it needs new load and profits, but these cannot be secured in 1935 by the use of 1929 sales methods and conditions. Mass selling alone can achieve outstanding success.

—H. O. Loebell

To those in the utility industry it is well known that state or municipal ownership propaganda is almost wholly developed and fostered, not by those prompted by altruistic motives, but by those maliciously attempting to use such propaganda for their political advantage.

—F. L. Chase

Can the gas industry disregard something as popular as air conditioning, something that is so much in the public mind as air conditioning, and still maintain its position?

—L. C. Harvey

There is but one solution for many of the problems of the gas industry, and that solution lies in the obtaining of greater sales of gas per customer.

—B. H. Gardner

The gas industry must sponsor extensive research to develop new uses for gas. It must encourage manufacturers to improve and modernize existing gas appliances. It must shoulder the burden of pioneering new appliances.

—Thomas J. Gallagher

Automatically controlled gas fuel presents to the restaurant fraternity an incomparable heating element. No other fuel has the same capabilities of trouble-free, economical operation.

—Daniel J. Brogan

The past year has been one of extraordinary advancement in mechanical office equipment. Some of the most important inventions appear in public utility billing equipment.

—W. S. Bowser

Customer attitude in companies where the credit and collection policy is established on a fair and equitable basis without giving undue leniency shows that the customer reaction is just as good or better than in those cases where companies have attempted to make their customer treatment extremely lenient.

—S. H. Corson

A favorable spirit of the employees toward the company must be developed if proper company recognition is to be gained through employee contacts, either social or commercial.

—Jacob B. Jones

Your industrial man cannot do justice to you or to himself unless he is given the opportunities to keep himself up to date. He can scarcely do this if kept cooped up in his own limited territory.

—F. T. Rainey

The Research Committee believes it will be necessary for the industry to more fully recognize the strategic importance of combustion, ranking, as it does, as the key to successful utilization in an increasing number of industrial utilization situations.

—F. J. Rutledge

This is a period for intensive new business development. . . . Present conditions requiring extensive and rapid expansion of volume to sustain earnings are almost certain to lead into a period of more extensive use of class rates.

—E. N. Strait

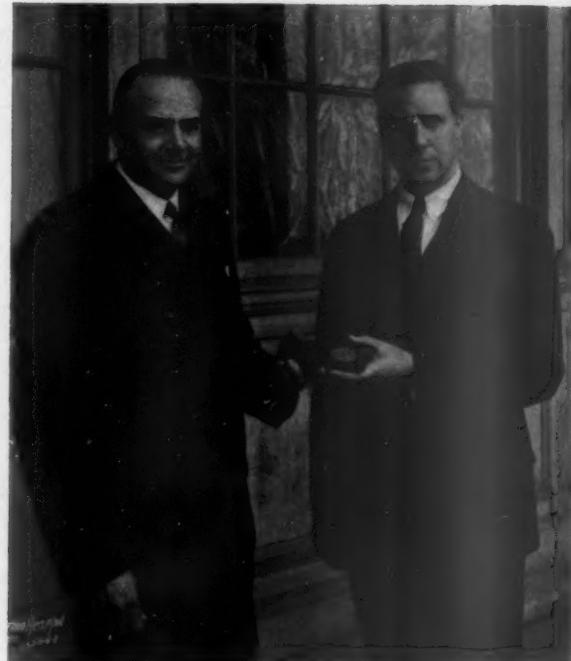
The type of man on the job, from superintendent to oiler, has more to do with the solving of problems and the resultant successful operation of a compressor station than any other one thing.

—B. R. Bay

To meet Government competition we have been obliged to adopt rates the soundness of which might well be questioned. But, we have the utmost confidence in our industry, the commodity we sell, and the fairness of the American people.

—A. J. Goss

Loebell and Fulweiler Honored for Achievements



Left—Henry O. Loebell receiving the Charles A. Munroe Award from A. J. Gonnoud, chairman of the Award Committee. Right—Presentation of the Beal Medal to W. H. Fulweiler by E. R. Acker, representing the Beal Family

HENRY O. LOEBELL, of Chicago, general sales manager of the Natural Gas Pipeline Company of America, and Walter Herbert Fulweiler, of Philadelphia, chemical engineer of The United Gas Improvement Company, received distinctive recognition at the annual convention of the American Gas Association for their achievements in the gas industry. Mr. Loebell received the Charles A. Munroe Award and Mr. Fulweiler was awarded the Beal Medal.

Mr. Loebell, a leader in advocating the development of house heating with gas fuel, devised the highly successful house heating program inaugurated July 19, 1933, by the gas companies in Chicago.

In recognition of outstanding contribution to the gas industry, he was presented with one of the Association's coveted honors—the Charles A. Munroe Award, which is granted only

for noteworthy and meritorious service. The award consists of a substantial financial acknowledgment and appropriate certificate.

The presentation to Mr. Loebell was made by A. J. Gonnoud, chairman of the Award Committee. Mr. Loebell was designated to receive this honor by the Charles A. Munroe Award Committee, whose recommendation was approved by the Executive Board of the American Gas Association. Members of the Award Committee are A. J. Gonnoud, president, Kings County Lighting Co., Brooklyn, N. Y., chairman; Paul S. Clapp, vice-president, Columbia Gas and Electric Corp., New York, N. Y., and H. L. Dickerson, Electric Bond and Share Co., New York, N. Y.

This year marks the close of Mr. Loebell's third decade in gas industry activities. When he was associated with the Denver Gas and Electric Light

Company in 1904 and 1905, he developed the first gas appliance laboratory, and constructed entirely new equipment which enabled the gas utilities to enter the industrial heating field. His success in this pioneering effort led to the formation of the Improved Appliance Company, which was later expanded into the Surface Combustion Corporation.

In 1914 and 1915, Mr. Loebell served in the natural gas fields in Kansas, applying his talents to increasing the utilization and efficiency of natural gas in boilers, zinc smelters and cement mills. From there he went to Toledo, where he solved many of the heat treating and forging problems confronting the glass and automobile industries. Subsequently, under his direction, the Combustion Utilities Corporation undertook a study of the production of manufactured gas and its products. Among the contributions

realized from this work were a process for the production of low temperature coke and briquettes and the development of metallic machinery for the continuous carbonization of coal.

Important also during this period was Mr. Loebell's development of a carbon black process, now used by a Texas plant which produces twelve million pounds of carbon black a year.

In 1922 Mr. Loebell and his staff developed an efficient conversion burner which had a marked stimulus on the use of gas for house heating. In 1929 he served on a committee which negotiated the agreement by which natural gas was introduced into Chicago, and in 1932 he inaugurated surveys and experiments designed to test the Chicago house heating market. Later that year he devised the mass selling plan which enabled the Chicago utilities to develop their house heating business when the country was in the grip of a severe business depression. The results of this campaign, predicted by Mr. Loebell, have followed his original estimates month by month with only a slight margin of difference.

Mr. Loebell has delivered many addresses before meetings of the American Gas Association, and has been an active worker in Association circles.

Beal Medal

The presentation of the Beal Medal to Mr. Fulweiler was made by E. R. Acker, president of the Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y., acting in behalf of the family of the late W. R. Beal, who established the award in 1897 for the best technical paper delivered at Association meetings.

Mr. Fulweiler's papers presented at the Association's 1933 convention and the 1934 Production and Chemical Conference won for him this recognition. The papers described the research achievements of the physical and chemical laboratories of The United Gas Improvement Company. In 1908 Mr. Fulweiler was awarded the Beal Medal by the American Gas Institute, one of the predecessor organizations of the American Gas Association. His paper at that time dealt with coal carbonization.

The Beal Medal Committee was unanimous in recommending to the Executive Board of the Association that

this year's award go to Mr. Fulweiler. Members of this committee are J. A. Perry, The United Gas Improvement Co., Philadelphia, chairman; O. S. Hagerman, American Light & Traction Co., Chicago, and Charles A. Harrison, Henry L. Doherty & Co., New York.

The award consists of a bronze medal, and has been sparingly bestowed. The list of those who have received the medal in the past contains

the names of men well known as leaders in the gas industry. Following are those who have received the medal: Henry L. Doherty, Arthur Glasgow, I. N. Knapp, B. H. Spangenberg, Henry L. Rice, W. H. Gartley, C. J. Ramsburg, H. W. Alrich, L. E. Worthing, C. O. Bond, O. B. Evans, F. E. Steere, E. J. Brady, F. W. Sperr, Jr., A. W. Warner, R. L. Brown, L. J. Willien, Louis Stein, P. T. Dashiell, R. B. Harper, and S. S. Tomkins.

D. H. Warner Dies

DEVER HOWARD WARNER, chairman of the board and a former president of the Bridgeport Gas Light Co., died at his home in Fairfield, Conn., September 23, of a heart attack. He had been in poor health for a month.

Mr. Warner, who was one of Bridgeport's most prominent industrialists took an active part in civic affairs and was president of the gas utility for a period of years until he became chairman of the board, a position he held at his death. He is survived by two sons, Dever C. and Bradford G. Warner, and a daughter, Mrs. Margaret Warner Field.

Employee Load Building Campaign

ONE million cubic feet of additional annual gas load every day for 60 days," is the object of The Philadelphia Gas Works Company, in an intensive drive now under way to obtain new house heating and water heating prospects through the cooperation of employees.

The "Million-a-Day Campaign," as this big load-building activity is known, began September 1 with the distribution of campaign manuals and circulars followed by a rapid-fire series of employee group meetings. It will continue until October 31. Efforts of individual employees will be rewarded with cash prizes and bonuses.

An interesting feature of the first month of the campaign was a limerick contest. On the back of the house heating prospect slip was printed a short rhyme about the comforts of automatic gas heat and on the water heater slip, a lively jingle about gas hot water service. The last lines of these verses were blank. Prizes of \$10 each were offered for the best last lines for these jingles.

New Natural Gas Wells in Michigan

NEW natural gas wells of commercial size completed in Michigan during the first nine months of 1934 number 34 with an estimated initial potential produc-

tion of 108,239,400 cubic feet per day, according to a report "Oil and Natural Gas Situation in Michigan as of October 1, 1934" issued by the Utilities Information Bureau. This record for nine months compares to 10 gas wells completed in the 12 months of 1933 with an aggregate estimated initial production of 57,128,000 cubic feet.

Natural gas production and utilization during the nine months, including casing head gas used in the production of gasoline, has been at the rate of approximately 8,200,000 cubic feet per day.

Twenty-five Michigan communities with a population of approximately 226,000 persons will be served with natural gas when Muskegon and Muskegon Heights are added to the list in November.

A. G. A. Scholar at Johns Hopkins



John Machek

John Machek has been selected as the American Gas Association scholar at The Johns Hopkins University, Baltimore, Md., for the year 1934-35.

Mr. Machek was born in New York City, June 28, 1914. He completed

his high school training at East Islip, N. Y., and entered The Johns Hopkins University in September, 1932. He is a candidate for a degree in the Gas Engineering course offered at that University.

In the summer of 1932 he worked as laboratory assistant in the gas distribution laboratory of the Long Island Lighting Company. The following summer he worked for the same company, doing construction work. This past summer he was employed again by the Long Island Lighting Company, this time making a pressure survey on gas mains.

New Directors and Chairmen



*Addison B. Day
Director*



*B. J. Denman
Director*



*Henry L. Doherty
Director*



*O. H. Fogg
Director*



*Arthur Hewitt
Director*



*N. C. McGowen
Director*



*William T. Rasch
Director*



*Thomas E. Roach
Director*



*W. Frank Roberts
Director*



*John B. Tonkin
Chairman
Natural Gas Dept.*



*A. S. Corson
Chairman
Accounting Section*



*F. M. Rosencrans
Chairman
Commercial Section*



*J. F. Quinn
Chairman
Industrial Gas Sect.*



*John A. Fry
Chairman
Manufacturers' Sect.*



*C. A. Harrison
Chairman
Technical Section*



*Henry Obermeyer
Chairman
Pub. and Adv. Com.*

The Gas Industry Today



President Caster

IT has been a pleasure to serve the Association during the year just past. There have been many perplexing problems to be solved, but the industry has held together—everyone has cheerfully cooperated and given freely of his time and energies. I feel today that the members of the industry are closer together in understanding, and a feeling of friendship toward each other, than they were at the beginning of the year. We have learned to appreciate each other's problems and to respect each other's points of view.

Working with Major Forward and his headquarters organization has been especially pleasant. The Major and his staff have administered the affairs of the Association efficiently and economically. The Association has supplied information to both the manufactured and natural gas departments that has been indispensable in the preparation and presentation of their codes. I am sure the member companies would profit by closer relations between their

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By H. O. CASTER

President, American Gas Association

organizations and the Association, and that they would find its files a veritable storehouse of information which would be helpful to them. Major Forward has so managed the Association that, while it has brought the maximum of benefit to its members, its activities have not brought any criticism upon the industry. I congratulate the Association upon having as managing director to administer its affairs an executive so capable and efficient. Presidents come and go each year, but I sincerely hope, for the good of the Association, that the Major may continue for many years in its management.

Codes

At the beginning of the Association's year, both the manufactured and natural gas departments were confronted with the urgent request of the federal government to prepare and submit codes covering their operation. The manufactured gas industry is more than 98 per cent engaged in intrastate commerce. All the units of the industry are under the control of state regulatory bodies and subject to state laws, and members of that industry felt that they must not do anything which would in any way interfere with their compliance with these state laws or the orders of the state regulatory bodies.

In January of this year it was thought best to call a meeting of the members of the manufactured gas industry to determine whether or not it should file a code, and, if so, whether it was better to organize an association for the preparation, presentation and administration of that code. Accordingly, a meeting was held in New York on January 19, at which 85 per cent of the industry was represented. It was there determined to file a code, to organize an association and appoint a Code Committee. A committee had already been at work and had prepared a tentative draft of one, which was read and, in the main, approved by the newly organized association. This code was completed

and presented to the deputy administrator and his associates at Washington, in April. Hearings on it have been postponed from time to time. Requests have been made by the deputy administrator for some changes in the code most of which have been met, but it has not yet been approved and it is difficult now to say when or whether we shall have a code at all.

The business of the natural gas industry is divided into three parts—the production of gas, its transportation and its sale. At this time its sale only is under the control of regulatory bodies as a utility. The production and transportation of natural gas is not regulated, and, therefore, is unquestionably subject to the general Industrial Recovery Act. It appeared likely that these two divisions of the natural gas industry would be subject to a code. Because of the difference between the business of that industry and the manufactured gas industry, it was thought best that a separate code be prepared and presented by the natural gas industry, and this was done. Its committee presented its code in Washington on January 3. The committee has been asked a number of times by the deputy administrator to make changes in the code and most of these requirements have been met, but, like the manufactured gas industry's code, it has not yet been approved.

Problems Facing the Industry

Both of these committees did their work well. The hearings on the codes were conducted in such way as to reflect credit upon both groups. I am sure the deputy administrator and his associates feel that both branches of the industry have cooperated, and are cooperating, fully with the government, and that the codes which they have presented are fair and reasonable.

The utility industry has many difficult problems before it. Its tax burdens have become heavier, its labor costs have increased, as well as the costs of materials it utilizes. In the manufactured gas industry the costs of coal and oil have advanced materially. At the same time, there has been, and

still is, a clamor for lower rates. There has been a great deal of propaganda spread throughout the country to the effect that the public utilities are earning an unreasonable return—that they should suffer decreased earnings during periods of depression the same as any other industry, and that regulation has broken down.

The United States Government has embarked upon water power projects for the avowed purpose of testing the cost of electric service. By authority of the National Recovery Act, it is offering to loan to any municipality desiring to construct a utility plant money for its construction, with the agreement that 30 per cent of such money advanced shall be a donation. In many instances, such loans have been approved to cities already adequately served by privately owned and operated plants. No consideration is given to this investment of private capital. In many communities, however, the citizens have voted not to accept such loans. Where the communities are adequately served by privately owned and operated plants, such government loans cause an unwarranted destruction of private property.

These government loans are made on the assumption that state regulation has broken down. This we deny. State commissions on the whole are composed of honest and intelligent men. They have corps of efficient experts, and are constantly trying to protect the interests of the consumer. They understand local conditions. The territory under their jurisdiction is so small that they can go directly to the location of the utility being investigated and ascertain, on the ground, the true facts. State regulation may not be perfect, but it is better than any federal regulation can be. If commissioners are biased or prejudiced in any way, it is in favor of the consuming public, and not in favor of the utilities.

The orders of these commissions are presumed to be reasonable and legal, and are in effect binding unless set aside by an order of court. The statutes in most states provide for early hearing and disposition of cases brought to set aside such orders. In some states the commission can go directly into the court of last resort and, by proceedings

in mandamus, have the entire court case disposed of in from sixty to ninety days. The order can only be set aside by a federal court, on the ground that it is confiscatory. No federal judge can issue a temporary injunction restraining such an order. When an action is filed in his court attacking an order, he must immediately call in two other judges, one of whom must be a Circuit Judge, to sit with him. Appeals from this three-judge court can be taken directly to the Supreme Court of the United States.

Your president served for four years as attorney for a state utilities commission, and states without fear of successful contradiction that there is no occasion for any unnecessary delay in enforcing orders of state commissions.

The standing of state regulatory bodies has been injured by misleading and false propaganda of municipal ownership advocates and others desiring to centralize all governmental power in the national capital. These advocates have failed in their attempts to convince the residents of most communities that municipal plants are preferable to privately owned and operated ones regulated by state bodies, and have appealed to Congress, which body has passed legislation authorizing the Federal Government to construct and operate vast power plants. It has already taken over Muscle Shoals, and is actively engaged in completing the project and soliciting business in the Tennessee Valley.

TVA

The Federal Government denies that the Tennessee Valley Authority is subject to state control, which means that, regardless of the desire of the citizens of any community or state, and in violation of state laws, the Government can build plants and furnish service at whatsoever prices it chooses to charge—it can crush out its competitors and destroy millions of dollars of private capital. For instance, it can go into the Tennessee Valley and sell electricity at a price below the cost of production, or even give it away, thereby ruining not only the electric companies in that area, but the gas companies as well, and this it is now threatening to do.

I venture the assertion that every

piece of machinery or equipment which will be used in the so-called governmental experimental projects has been invented and developed by private initiative and private capital. Destroy the privately owned and operated utility and progress in the industry will cease. Municipal plants, operated by politicians and others untrained and inexperienced in the business—none of whom ever met a payroll in their lives—cannot and will not supply the public with that efficient and sufficient service now supplied by private enterprise and private capital.

The privately owned and operated utility is carrying a heavy burden of taxation from which the municipal plant is relieved. This exemption of municipal plants is not only unfair to privately owned utilities, but it is unfair to the public as well. For example, if the City of Chicago, Illinois, owned and operated its utilities, every farmer and every business man in the state would be compelled to pay increased taxes in order to supply funds which were formerly supplied by taxes paid by privately owned plants. Publicly owned utilities should be subject to the same taxes as are paid by privately owned plants.

That there is a great deal of adverse criticism of utilities and utility rates at this time, there is no doubt. I think this is due, more than anything else, to false propaganda spread by municipal ownership advocates. This propaganda should be met. Millions of people in this country have invested their savings in public utility securities, believing them to be among the most stable investments they could secure. These investments are being destroyed by the propagandists, and it is a part of the business of those charged with the management of these properties to meet this propaganda and protect these investors.

I think that some of the criticism arises from the too complicated procedure of regulation. When a rate case is presented to a commission, oftentimes representatives of the city or town affected are present. These representatives see experts get on the stand with reams of highly technical exhibits piled up before them, and proceed to explain those exhibits in technical language which the layman cannot and does not understand. When

the hearing is over, it has been so highly technical and theoretical that the representatives of those most affected do not know what has transpired.

Simplification of Rate Making Necessary

Valuation of properties for rate-making purposes has been altogether too technical. Large sums of money have been spent and interminable delays caused by attempts to prove such values to the last cent, whereas experts for the commission and representatives of a company can arrive at the reasonable value of a property with sufficient accuracy without the necessity for resorting to the involved procedure now followed in most instances. A great deal of the lengthy discussions about intangible values should be eliminated. Under present methods, after the value of a property has been ascertained, an attempt is then made to fix a rate which will yield a fair return on this valuation. This estimate is based on many unforeseen contingencies. No one can tell what the future financial condition of the country will be, or what will be the cost of the product to be supplied to the public, and these and other uncertainties are far greater than any doubt as to the real value of a property for rate-making purposes.

I think it would be very much to the interest of utilities to have the rate-making processes so simplified that the representatives of the people can comprehend the procedure. If it is not possible to arrive at the absolute value of a property, then give the public the benefit of the doubt. Public utility operators must bear in mind that they are engaged in a quasi-public service, and that the public is entitled to know a great deal more about their business than it would be if they were engaged in a strictly private enterprise. I think it would be highly beneficial to the industry if its members could see to it that the public does know how their business is run, what they are doing to give service, how much it costs them, and the profit they make. Certainly we have nothing to withhold because the profits in the business have not been and are not excessive. We

should cooperate with state regulatory bodies and municipal officers in the regulation of our properties.

While the industry is still faced with many difficult problems, it has solved those with which it has been confronted in the past, and will solve those which will arise in the future. Both branches of the gas industry are engaged in a useful business, supplying a necessity of life to a modern civilization. The natural gas industry has an investment of \$2,250,000,000. It transports gas through more than 75,000 miles of mains and gathering lines, and distributes it through more than 50,000 miles of distribution lines to a population in excess of 28,000,000. It sells its product in competition with other fuels, not only for domestic cooking and water heating, but also for home and building heating, as well as for a large range of industrial uses. In many instances gas is transported for more than a thousand miles before it is delivered to the consumer, but even in such cases perfect service is rendered.

There is invested in the manufactured gas industry \$2,500,000,000. This industry supplies its products to a population of more than 50,000,000. It is meeting the competition of electricity on one hand and oil on the

other, and, in spite of increasing costs, is rendering to the public a service so uniformly perfect that it is seldom questioned. It is reaching out into new fields, selling gas for domestic heating, and is entering industry.

We have a right to be proud of every division of the industry, for the wonderful inventions that have been made by personal initiative and the enterprise of private capital—for the willingness and ability of the members of the industry to supply an adequate service to growing communities—and we should go forward aggressively to solve its problems and protect our business.

Midwest Industrial Sales Council

THE Midwest Industrial Gas Sales Council of the American Gas Association held a well-attended meeting at the Palmer House, Chicago, Ill., September 21. The meeting, which was attended by representatives of nine utility companies selling gas to industrial plants of the Midwest, was devoted to a discussion of the competitive fuel situation.

C. K. Lekberg, chairman of the Competitive Fuels Committee of the Council, led the discussion which was subdivided into four topics, as follows:

1. Cost of Competing Fuels and Trend of Prices.
2. New Developments in Equipment Using Competitive Fuels.
3. Cost Analyses and Test Data on—
 - (a) Business that has been lost
 - (b) Business that has been threatened but retained
 - (c) New business that has been added.
4. Methods Used To Meet This Competition.

The next meeting, which will be the annual business meeting, will be held in January, at which time officers for the coming year will be elected. A Nominating Committee composed of the following was appointed by G. A. Uhlmeyer to report at that meeting:

A. F. Mitchell, Northern Indiana Public Service Company, Hammond, Indiana; A. J. Turpin, Public Service Company of Northern Illinois, Maywood, Illinois; George F. Ellis, LaPorte Gas and Electric Company, LaPorte, Indiana.

The January meeting will include personal experiences encountered by the various men in the sale, installation and use of industrial gas.

OLD TIMER



The "Sun Dial," one of the first gas ranges made in this country. It was manufactured by the Goodwin Meter Company in the early 1850's

The Association's Work

ANY detailed report of the activities of the Association is obviously impracticable. This is true because of their volume and variety and, besides, printed reports have been prepared in connection with this convention. It is true also because we deal with problems as and when they arise. A review of the work of the year would consequently be to a substantial extent stale news for the members of the Association.

A voluntary association of an industry is of little value unless it has the capacity to recognize and adapt itself to changing conditions. Just as executives know that in their staffs, adaptability is as important as ability.

The development of National Recovery Administration codes for the manufactured gas industry and the natural gas industry and the administration of the code for the gas appliance industry have been in the hands of committees. The American Gas Association has no connection with any of these codes. Still, headquarters, and especially its statistical department, has naturally been called upon by these committees for a very large amount of work.

Preparation of Codes

These industry code committees do not have quarters and personnel and the Association has been handling an enormous volume of correspondence. Due to rapidly recurrent demands for changes by Washington authorities and to the high birth rate of ideas in the National Recovery Administration, the progress of the codes has not only been very slow but has absorbed an enormous amount of the energies and activities of members and employees of the Association. Expenditures of time and thought, to say nothing of money, to which many members of the gas industry and the gas appliance industry have been subjected during the past fifteen months, in receiving and considering suggestions from governmental sources, often

By **ALEXANDER FORWARD**

Managing Director,
American Gas Association

to find them soon forgotten or displaced by new ideas, would, if concentrated upon the problems of service and competition, have been of great value to the industry and its customers.

Continuous attempts to bring portions of our business under the codes of other industries, with whose preparation we had no part and to which at no time have we agreed, have, except for a single instance, been successfully resisted.

Government Competition

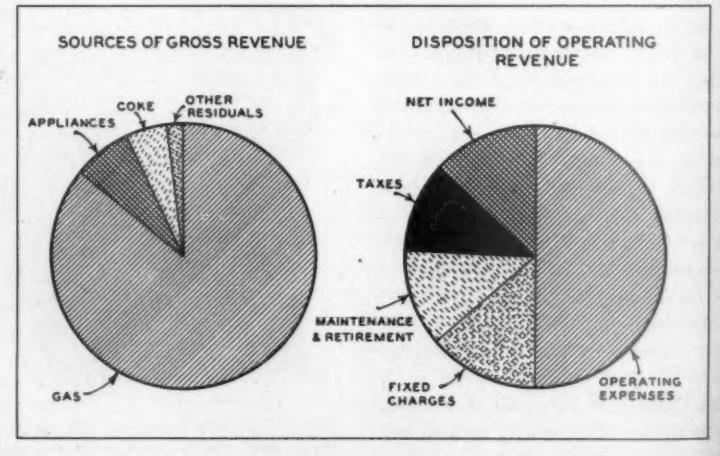
As an instance of adaptation to changing conditions, Association Headquarters has dealt continuously with the consequences arising from the establishment by the Federal government of the Tennessee Valley Authority. Committees, conferences, correspondence, have multiplied during the development of this plan. As it became more and more evident that those in charge of the experiment to transform human nature are planning soon to extend their program all over

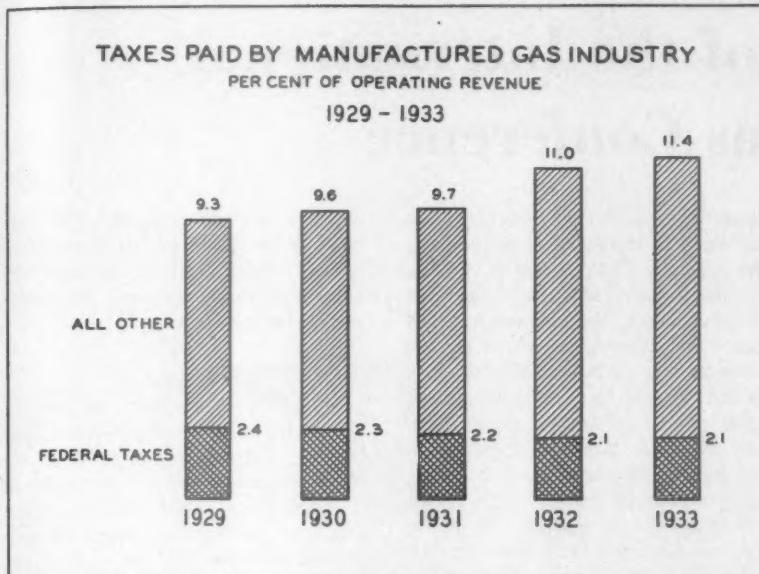
the United States, the industry has rapidly awakened to its danger.

The Tennessee Valley Authority and the Electric Home and Farm Authority have under threat of direct government competition forced reductions in electric rates in the Southeastern States; have, by fear, forced the manufacturers of electric appliances to reduce prices and bring out new models; have sponsored deferred payment plans for the sale of electrical appliances which it is difficult for any competition to meet; have used and are using governmental agencies at their command with unlimited machinery for propaganda, to stimulate their plans in the Tennessee Valley and prepare for their favorable public reception elsewhere. Public revenues, including taxes paid by the gas companies, are used to foster competition and to sell domestic services in no way superior and, in most cases, inferior and more expensive.

There can be no doubt that this propaganda is injuring at this moment the business of every gas company in this country. They will be more severely injured when they find themselves in an area like that of the Tennessee Valley. The announcement that

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the majority if not all will be in such area in time, has been officially made.

These problems are being carefully and vigorously met. Since it becomes more and more apparent that there is no reason to hope that these experiments will be soon abandoned or even curtailed, your Association is preparing further steps to meet the situation. We have the strength and resources to meet even attack from our own government.

We shall need them. The advent of the electric light was a minor event compared with the dangers of the program of these governmental agencies.

Housing Cooperation

A more recent governmental activity and one with which we have established most satisfactory cooperation is embodied in the program of the Federal Housing Administration. Under capable direction, this agency will help finance the modernization and construction of American homes.

Some of our companies have adopted definite programs for participation. Others are preparing to do so. Association Headquarters has been using every resource at its command, which means a great deal when we have such thorough cooperation of our membership, to so tie in with the program of Administrator Moffett and his assistants as to encourage the installation of modern domestic gas ap-

pliances of superior quality. The loans may be made upon any appliance permanently connected with the gas piping.

Excellent opportunities are thus afforded the gas industry. This is one governmental enterprise founded on straight business principles.

These are but three of the hundreds of matters that have engaged our attention and energies in the course of a year.

It is especially gratifying to say that an increasing number of members correspond or confer with headquarters on matters where we may be of assistance. It is our only regret that all do not yet avail themselves of the services for which we are organized.

Acknowledgment

The American Gas Association has always been fortunate in the quality of its members. Their ready spirit of helpfulness on committees and otherwise and the invaluable resource possessed by the industry in their combined experience and judgment, have made it possible for this organization to go through the most difficult period in the country's history with a comprehensive program of service on reduced budgets and to avoid the troubles which have beset so many other industries.

The Association has always been fortunate in the personnel of its Execu-

tive Board. Willing to give their time and thought, although busy with their own affairs, members of the Board have been a tower of strength in directing the activities of your organization and in limiting these activities to those immediately the most important.

The Association has always been fortunate in its presidents. They have been men of sound judgment, of balance and breadth of view. President Caster has given unsparingly his time and thought for the gas business. To the president, vice-president Young, and to our other officers and the chairmen of sections and committees and to headquarters staff, without whose loyal and intelligent support no satisfactory result would be possible, I make grateful acknowledgment.

Morse DellPlain Takes New Post

MORSE DELPLAIN has resigned as president of the Northern Indiana Public Service Company, Hammond, Ind., to accept the vice-presidency of the Welsbach Street Lighting Company of America, with national headquarters in Philadelphia.

Mr. DellPlain also resigned as president of the Gary Heat, Light and Water Company, the Indiana Service Corporation and the Indiana Hydro-electric Power Company. The resignations were effective October 15.

Recent Visitors to A. G. A. Headquarters

Chester N. Chubb, executive vice-president, American Light & Traction Company, Chicago, Ill.

John A. Fry, vice-president and secretary, Detroit-Michigan Stove Co., Detroit, Mich.

Roy M. Godwin, director of safety department, Philadelphia Electric Company, Philadelphia, Pa.

R. A. Malony, assistant sales manager, The Philadelphia Gas Works Co., Philadelphia, Pa.

W. M. Fowler, secretary, Lovelace Water Heater Co., Philadelphia, Pa.

Floyd M. Rosenkrans, new business manager, The Gas Service Co., Kansas City, Mo.

E. R. Acker, president, Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y.

John B. Klumpp, 123 South Broad Street, Philadelphia, Pa.

John L. Conover, auditor, gas department, Public Service Electric & Gas Co., Newark, N. J.

Edwin W. Esslinger, supervisor, industrial gas division, Union Gas & Electric Co., Cincinnati, Ohio.

H. R. Sterrett, vice-president and general manager, New Haven Gas Light Co., New Haven, Conn.

R. C. Hoffman, Jr., president, Roanoke Gas Light Company, Roanoke, Va.

Frank H. Trembley, Jr., supervisor, industrial department, The Philadelphia Gas Works Company, Philadelphia, Pa.

Philip Gadsden, vice-president, The United Gas Improvement Co., Philadelphia, Pa.

C. M. Rogers, consulting gas engineer, New Orleans Public Service Inc., New Orleans, La.

Echoes of the International Gas Conference

THREE is nothing haphazard about the work and activities of the American Gas Association which, by cooperation and co-ordinated efforts, is doing excellent work for the Industry," Thomas Carmichael, of Portsmouth, England, declared in the course of his address "Impressions of the Gas Industry in Canada and the United States," delivered at the June meeting of The Institution of Gas Engineers. This statement is emphasized by the London *Gas Journal* in a discussion of the paper delivered by Clifford E. Paige, vice-president of The Brooklyn Union Gas Company, and a former president of the American Gas Association, before the recent International Gas Conference at Zurich, Switzerland.

An aftermath of the international gathering, which was attended by delegates of twenty nations, has been a keen analysis of the methods employed in the different countries to improve the technique of gas manufacture, sale and distribution. The British gas industry, particularly, has made a thorough study of the historical and economic development of the American gas industry with a view to adapting such practice as appears to have possibilities of profitable application in their own industry.

Co-ordinated Research

It is interesting to note the considerable discussion in the British trade press revolving around research methods as outlined in Mr. Paige's paper on "Co-ordinated Research and Co-ordinated Rate Making." The *Gas World* of September 29, in a full page cartoon, reproduced here, depicts the American Gas Association opening Aladdin's cave of Gas Industry rewards with the magic words "Co-ordinated Research."

Commenting editorially on Mr. Carmichael's statement, the *Gas Journal* says:

"In his paper at the last meeting of the Institution, Mr. Carmichael went a good deal farther than the words

above quoted; for he concluded his testimony to the excellent work which the American Gas Association is doing for the Industry with the remark that the Association, 'by presenting a unified front, appears to have many advantages over our various organizations in their present form.' A unified front must possess advantages of its own, and this much may be admitted without any reflection upon our own highly efficient national bodies, whose constitution is strongly supported by an influential section of the Industry on this side. That was amply demonstrated during the meeting at which Mr. Carmichael's paper was submitted. David Fulton it was who pointed out in the discussion that 'our experience during the war showed that nothing so effective was achieved as was done by the appointment of a Generalissimo controlling the whole operations of the war.'

Collective Approach

"At the moment, the words 'co-ordinating' and 'co-ordination' seem to be regarded almost as magic keys for the opening of any door, and though this may be a somewhat exaggerated view, there is no doubt that they are near enough to an 'open sesame' to be of inestimable value. This is shown once again by Clifford Paige in his International Gas Conference paper. Co-ordinated research and co-ordinated rate making have led to a keener appreciation of possibilities and an extension of gas service to new fields of operation, as well as a refinement and perfection of service necessary to meet any competition. It is felt in the United States that, though certain problems in research may be conducted by individual companies, problems which are common should usually be approached collectively by the Industry, as such an arrangement, where reasonable, assures the most comprehensive result at the lowest cost. Experience there has made research on a cooperative basis an integral part of Gas Industry procedure,

and this cooperative research has centered in the American Gas Association —thus making available an enormous amount of ability operating through a single clearing house.

Testing Laboratory

"While quite a number of projects are carried on in the Association's own Testing Laboratory, only those researches are assigned to it for which it is particularly suited. An illustrated article in the '*Journal*,' dated October 18 last year described the visit of the English delegation to the Laboratory at Cleveland, Ohio, and it was then stated that during the preceding seven years there had been concluded or initiated there eight major research programmes. In addition, a large number of minor studies had been carried out. Mr. Paige at Zurich gave interesting details of some of the Association's researches. And then there are, of course, the approval tests of appliances. Both this Laboratory and a branch one at Los Angeles, which is similarly provided with staff and apparatus, are centrally situated for the convenience of the manufacturers, who find that the Laboratory Approval Seal indicating that an appliance has been tested and approved by the American Gas Association Testing Laboratory is becoming essential. The requirements which appliances submitted must meet represent minimum standards for safe operation, satisfactory performance, and substantial and durable construction."

Rate Schedules

In a further discussion, the London "*Journal*" includes the following on American practice in developing scientific rate schedules:

"Assuming that it is a fair thing to ask what has been the value of the cooperative research sponsored by the Gas Industry of the United States through its Association, Mr. Paige sets down the answer in his paper, and one part of this answer deals with scientific

(Continued on page 411)

THE OPEN SESAME !



JOHN BULL (British Gas Industry): Ah! I forgot the word "Co-ordinated."
[Speaking before the recent International Gas Conference at Zurich, Mr. Clifford E. Paige, of New York, said:
"Research is the watchword, the open sesame to the future."]

[Cartoon by Wallace Cope]

—The Gas World, Sept. 29, 1934

Better Housing Program Offers Challenge to the Industry

RECOGNIZED as one of the most far-reaching elements of the New Deal, and one of the few which has received uniform approbation, the Federal Housing Program is rapidly gaining momentum. Since the Administration ruled that gas appliances are "non-removable" and eligible for financing under the terms of the housing act, there has been widespread assurance of support from many sources in the industry.

The nature of the support has depended very largely on the status of the program in each locality. In some situations where regular Community Better Housing Committees have not yet been organized, gas companies are taking the leadership in arousing the interest of trade groups, banks and financial institutions, newspapers and other organizations to bring about an early inauguration of the housing program.

Financing Plans

In other cases where local financing arrangements have not been perfected, some gas companies are considering the use of financing plans of manufacturers such as the American Gas Products Corporation, the Crane Company, National Radiator Corporation, Johns-Manville Corporation, and others, which afford the means of financing modernization jobs involving the products of these organizations. A detailed account of the Johns-Manville program is included later in this article.

Where an active housing committee is operating, the gas company has cooperated by mobilizing its allied dealers, salesmen and other employees in support of the program. The public has been informed by direct mail, newspaper advertising, displays and exhibits of the possibilities of home modernization through the insurance of private credits by the Federal Housing Administration. Manufacturers of gas appliances have urged their dealers to cooperate with the movement in every way possible. In short, the

vast resources of the industry are responding to this challenge to private enterprise.

The American Gas Association has acted as a clearing house for information concerning the activities of other companies. It has also distributed to its members complete information on the releases, bulletins and pamphlets of the Housing Administration so that each company would have the facts upon which to base its own program. The most recent activity of the Association has been the preparation of a booklet entitled, "How and Why Gas Companies Should Support the Better Housing Program." It will be ready for distribution November 1.

A. G. A. Booklet

This booklet emphasizes the fact that the entire housing program is a straight business proposition wholly dependent upon the private institution's willingness to lend and the citizen's willingness to spend the money for repairs and modernization. It brings out the competitive angle of the program and includes an account of the method employed by one aggressive company in cooperating with the program. The following paragraph was taken from this booklet:

"Although business properties are within its scope, the primary objective of the National Housing Act is the improvement of American homes. Throughout its long history the gas industry of America has catered mainly to the needs of the home. More than 75 per cent of its revenues at present

J. W. West, Jr., secretary of the Commercial Section, American Gas Association, and George W. Bean, fuel consultant of the Association, have been appointed industry advisors to the Federal Housing Administration, the former to represent the utility companies and the latter the gas appliance manufacturers. The appointments were made by the Federal Housing Administration.

are received for domestic services. No industry is more vitally interested in better housing and better housing standards. None has a greater responsibility to prove its place in the present modernization program, and probably no other industry has a better chance to prove the vital importance of its domestic services and appliances in the housing standards which the Federal Housing Administration is now preparing for application in its long-term program."

According to figures made public, October 19, by the Federal Housing Administration, out of 2,344 modernization and repair loans selected at random, totaling approximately a million and a quarter dollars, and covering key sections of the country, 17.71 per cent of the loans went for the improvement and installation of heating systems. This was a greater percentage than went to any other type of business.

Johns-Manville Credit Corp.

One of the greatest single movements on the part of a manufacturer to help the program occurred when Mr. Moffett announced in Washington that the Johns-Manville Corporation was setting up a new separate organization, to be known as the Johns-Manville Credit Corporation and which would make loans anywhere in the United States to home owners. This corporation is to supplement the banks, building and loan associations and other lending organizations now functioning.

Johns-Manville has dealers and representatives in every state and its materials are used in all parts of the home, ranging from rock wool for home insulation to asbestos shingles for the roof. Its "Million Dollar To Lend Plan" which has been functioning for the past four years is very much like the new credit corporation plan.

The new organization works very simply. In compliance with the regulations of the National Housing Act, a home owner's credit statement must

be filled out. Once this has been approved, the home owner may secure a loan for any amount up to \$2,000. This financing is done at government rates which are the lowest and most favorable terms made available for deferred payment financing. All charges represent only 5 per cent discount per year or, for example, \$5 for a \$100 one-year note. There are no down payments on the note, installments being made in equal monthly amounts.

On notes in excess of \$400, terms may be as long as three years.

Cash for Contractor

The best thing about the plan for the contractor is that every sale is a cash transaction for him. He is advanced 100 per cent of his contract with the home owner in cash immediately upon completion of the work, Johns-Manville's only requirement being that he do a satisfactory job. The

loans are made not only on their own materials by Johns-Manville but also on all other materials, labor cost and profit, providing that corporation's materials amount to 25 per cent of the total contract price.

In regard to the new Johns-Manville Corporation, Mr. Moffett said, "The Johns-Manville Corporation, by the organization of a separate credit corporation, has 11,000 lending agencies operating in all states under the terms of the National Housing Act. These 11,000 dealers and contractors representing Johns-Manville, are a very gratifying addition to the large number of banks, building and loan associations, and other agencies already aiding us in making it easy for people to repair and modernize their houses.

"In setting up this credit corporation the parent Johns-Manville Corporation informs me that it is being done not merely with belief in, but definite evidence of, the profound integrity of home owners—that American home owners are the best credit risk America has. Even at the depth of the depression this company lost less than two per cent on loans for building materials and repairs under its own previous deferred plan."

Promotion and Dealer Cooperation

Immediately upon the advent of the National Housing Act, Johns-Manville swung the force of its entire promotion and dealer cooperation plan into full and whole-hearted support of the government program. This support included a nation-wide radio campaign, magazine advertising, direct mail campaigns, additional missionary work with the trade factors on the part of the sales force and a nation-wide series of educational meetings of contractors and dealers designed to equip and stimulate them to cash in on the better housing program. In communities operating active local modernizing campaigns, Johns-Manville's cooperation has also included a news and picture service directed both to dealers and committees in charge of operation. And lastly—something unique in the history of building—Johns-Manville has provided its contractors with an estimating guide which will make it possible for a contractor on his first call to give an accurate

Why— GAS COMPANIES SHOULD SUPPORT THE BETTER HOUSING PROGRAM ...AND How



AMERICAN GAS ASSOCIATION
420 LEXINGTON AVENUE, NEW YORK, N. Y.

A.G.A. Housing Booklet—Original Size 8½" x 11".

estimate of any remodeling job and the bill of materials needed.

On the radio, this corporation sponsored a program last spring and is now again putting on an intensive 13-week drive for home improvement. Headed by the rapid-fire headline hunter, Floyd Gibbons, the program has been bringing in 8,000 inquiries a week. Mrs. Roosevelt spoke on one of the broadcasts last spring and Mr. Moffett opened the series this Fall. It was estimated that on last spring's program interest was created that brought in \$2,750,000 worth of business.

The direct-mail campaign has proved very successful. Every mailing carries a complete explanation of what the National Housing Act means to the prospect and establishes the dealer nearest to the prospect as the headquarters of home improvement work and credit facilities. National magazine advertising has also been used this year to great advantage. The copy includes an explanation of what the Housing Act is and what it means to the American home owner. During 1934 it is estimated that more than 25,000 inquiries resulting from magazine advertising alone will be turned over to dealers. Statistics show that 45 per cent of these inquiries are either turned into immediate sales or become excellent future prospects.

A booklet, "101 Practical Suggestions on Home Improvement" has been successful in focussing the attention of the home owner on his most valuable possession—his own home. Made up of practical ideas covering everything from attic to cellar improvements it is likely to catch the fancy of the home owner. It has gone out to 125,000 people throughout the country. The entire Johns-Manville promotion plan has been built around this book. Its distribution has been accomplished by offering it through the media of radio, magazine advertising, newspaper advertising, direct mail and posters.

SUMMARY OF ACTIVITIES OF SEVERAL COMPANIES IN PROMOTING BETTER HOUSING PROGRAM

Niagara Hudson Power Corporation

Manual of company activities prepared for guidance of personnel in cooperating with Better Housing Pro-

gram of the Federal Housing Administration.

Chief Executive Officer of each company division authorized to assign Division Executive to activity. Meetings of all resident managers and department heads arranged for purpose of explaining program through them to company personnel. Following cooperation offered to District Federal Housing Administration Directors:

1. Services of company personnel to head up or serve on local Better Housing Committees.
2. Use of personnel to assist in inaugurating and developing program by contacting banks, financial institutions, commercial trade groups interested in program, allied appliance dealers and others.
3. Use of company supervisory personnel offered to assist in training Better Housing canvassers, or volunteer workers to canvass under direction of local committee.
4. Company office space for information booths on Better Housing.
5. Company newspaper advertising, radio programs, store and window displays and truck posters arranged to tie in with local program.

A "box" to be carried in all company newspaper advertisements mentioning FHA program and inviting inquiry at company offices. Cooperative utility service advertising and publicity by all local dealers urged. Bill insert privileges extended to local committee.

Public Service Company of Northern Illinois

Company has publicly endorsed movement. Announcement from company president urges cooperation of every employee.

General office executive designated as Housing Coordinator for company. Division Advisor appointed for each company division. Company personnel encouraged to take part in community committees and to advocate formation of such committees where not yet established. Company considering repairing and rehabilitating its property and suggesting that employees make needed repairs in their homes under federal program.

Company newspaper advertising in-

cludes Better Housing emblem and statement that company is cooperating. FHA loans emphasized in all advertising featuring utility services eligible for these loans. Window displays, truck posters, house organs, and customers' bulletins emphasize Better Housing program. Better Housing publicity furnished newspapers.

Speakers supplied to discuss Housing program when requested by community committees. Projection equipment offered for use of local Better Housing Committees.

Minneapolis Gas Light Company

Company fully cooperating with Community Better Housing Committee which is very aggressive. Company provides general information on program and assists in obtaining credit for applicants. All company advertising media carry Housing program theme. Company's contact personnel and cooperative program with dealers being utilized to stimulate program. Company participates in general Better Housing advertising directed to public.

Pacific Gas & Electric Company

All company salesmen and employees informed of Housing program. More than a half million copies of company publication distributed, carrying special housing article to customers and approximately 100,000 stockholders. Special window displays, bill stickers, newspaper advertisements, scheduled on housing program.

"Federal Housing Act Gas Appliance Committee" organized under chairmanship company Sales Manager with subcommittees on Publicity, Finance, and Banking Contact.

Company has announced to dealers in its territory that it will pay one third of all advertising space costs, during fall 1934 for newspaper advertisements featuring appliances which can be financed by bank loans under Federal Housing Act. Full coordination of all allied appliance dealers and contractors to secure cooperation of these groups in advancing the program.

The Brooklyn Union Gas Company

As member Community Better Housing Committee, Company Executive presented plan for community organi-

(Continued on page 411)

Affiliated Association Activities

Empire State Gas & Electric Association

THE 29th annual meeting of the Empire State Gas and Electric Association was held at the Westchester Country Club, Rye, N. Y., October 5-6, with a registration of 220.

President A. H. Schoellkopf presided at the opening session Friday, October 5. The first address following the president's was delivered by Herbert O. Caster, president of the American Gas Association. Mr. Caster gave an informative talk on "Signs of the Times." Other addresses at this session included: "Problems of the Industry" by Thomas N. McCarter, president, Edison Electric Institute; "The Hazards of Unemployment and Superannuation" by H. C. Hasbrouck, Utility and Financial Accountant and "Rate Adjustment Plans" by F. A. Newton, Commonwealth and Southern Corporation.

The incoming president, Clifford E. Paige, presided at the second session Saturday, October 6. An outstanding feature of this session was the address by Henry O. Loebell, vice-president, Natural Gas Pipeline Company of America, on "Sales Methods for Profits for 1935." The session opened with an illustrated talk on "Roadway Lighting and Traffic Accidents" by Dudley M. Diggs of the General Electric Company, with a summing up by C. W. Appleton of the same company. The concluding address was made by A. E. Allen of the Westinghouse Electric and Manufacturing Company on the subject of "Our Dual Responsibility in Domestic Load Building."

An attractive entertainment program included a golf tournament and a putting contest. Other events were a bridge tournament Friday afternoon and a dinner dance Friday evening.

The Executive Committee at its meeting September 20 elected the following officers for the coming year: Clifford E. Paige, president, Ernest R. Acker, vice-president, Walter C. Phelps, treasurer. Members of the Executive Committee elected at the meeting were H. M. Brundage, Charles L. Cadle and Charles A. Tattersall.

Mid-West Gas Association

SECRETARY R. B. SEARING has announced the Fourteenth Mid-West Gas School and Conference will be held at the Iowa State College, Ames, Iowa, November 12 to 15 inclusive. This conference, as in the past, is sponsored by the Mid-West Gas Association with the cooperation of the Iowa State College. The committee in charge, under the leadership of R. L. Klar, is guaranteeing a program that will warrant an especially large attendance. Arrange-

ber 15 and 16. An interesting program is being arranged.

Convention Calendar

NOVEMBER

- 6-7 Autumn Research Meeting, The Institution of Gas Engineers
London, England
- 12-15 Gas School & Conference, Mid-West Gas Assn.
Iowa State College, Ames, Iowa
- 12-15 National Assn. Railroad & Utilities Commissioners
Washington, D. C.
- 12-15 American Petroleum Institute
Dallas, Texas
- 15-16 Indiana Gas Association
Purdue University, West Lafayette, Ind.
- 23 Gas Division, Wisconsin Utilities Assn.
Madison, Wis.

ments for a most complete display of distribution, production and metering equipment is being made by Assistant Professor L. W. Mahone of the Engineering Extension Service of Iowa State College.

Indiana Gas Association

SECRETARY P. A. MCLEOD has announced that a convention of the Indiana Gas Association will be held at Purdue University, West Lafayette, Indiana, Novem-

Wisconsin Utilities Association

THE Wisconsin Utilities Association will hold its first convention under the new reorganization plan November 22 and 23 in the Lorraine Hotel at Madison. Under the old plan the gas and electric sections held separate conventions, the last gas convention being held in 1931. These sections, under the new setup, are merged into the technical and operating section and will hold joint and individual convention sessions.

The respective section chairmen and the various committees have prepared programs which include many able speakers and subjects of vital importance to the industry. Particularly timely will be a description of the employee cooperative load building campaign of the Wisconsin Public Service Corporation. The results of this campaign will be covered by O. C. Roehl. Alexander Forward, managing director of the American Gas Association, will speak about the market for gas and the unfair competition created by the Tennessee Valley Authority. Another important problem, unaccounted-for gas, will be discussed by F. S. Burns and F. Hainer.

President Rork will present an address before the joint session on the afternoon of November 22. Other speakers on the program include: A. F. Tegen, J. A. Dickinson, H. B. Hummell, E. C. Hemes, Prof. O. L. Kowalke, S. B. Sherman, A. C. Davey, E. C. Brenner, A. A. Schuetz and J. A. Schellenberg.

Appointed to Natural Gas Fellowship



ANNOUNCEMENT has been made of the appointment of Kermit J. Sonney to the Natural Gas Fellowship of the American Gas Association at the University of Oklahoma.

Mr. Sonney was graduated from the University of Pittsburgh in 1932 with the degree of Bachelor of Science. While at the University he studied the subjects of refrigeration and applied mechanics.

After graduation, he was employed in the field department of the United Natural Gas Company of Oil City, Pennsylvania. During the winter he acted as instructor in the night school conducted by the company in conjunction with the Extension Division of Pennsylvania State College. Fields of special interest to him are applied engineering in natural gas work and cooperative education of young men in the natural gas industry.

At the University of Oklahoma, Mr. Sonney will continue the work done by Edward T. Harrison who held the A. G. A. Fellowship during the past year. This research work consists of a detailed study, through experimentation, of thermodynamics of gas regulation, giving emphasis primarily to the causes and remedies of regulator freeze-ups.

NATURAL GAS DEPARTMENT

FRANK L. CHASE, Chairman

A. E. HIGGINS, Secretary

JOHN B. TONKIN, Vice-Chairman

Standby Gas*

THE problem confronting the gas engineer interested in standby gas today is that of deciding which process or method is best suited for his particular needs. Practically all manufacturers of gas plant equipment have a process or method which they sponsor. Many gas companies have developed methods of their own.

Recent Developments

The refractory screen process and the recirculated oil gas process (the latter developed by E. S. Pettyjohn) may be classed as real developments. Both processes use no solid fuel in the generator and can be applied to a standard 3-shell carburetted water gas set with some modifications or changes in the set. The other processes or methods use solid fuel in the generator and oil in the carburettor. They are a modification of standard water gas practice.

In plants sending out a natural gas mixed with other gases it will probably be advisable to retain the carburetted water gas sets in condition to operate to produce a somewhat normal carburetted water gas which can be used for the gas other than natural gas as well as to produce a natural gas substitute.

The most recent development for standby gas is the use of a high B.t.u. butane- or propane-air gas. An extensive series of tests made last Spring at San Diego demonstrated that an 1,170 B.t.u. propane-air gas, specific gravity 1.30, burned very well in numerous appliances adjusted for 1,100 B.t.u. natural gas, specific gravity .65. Similar tests were made at Faribault, Minnesota, with practically the same results as the San Diego tests. This development will be fully discussed later.

Qualifications for Standby Gas Process

In an article by W. A. Dunkley in *Western Gas* for June, 1934, on remodeling the Memphis gas plant, he listed the following qualifications which a standby process should have to meet the conditions in Memphis:

1. Capable of being brought to operation from a cold condition rapidly.
2. Give a maximum production of high B.t.u. gas per hour.
3. Require a minimum force of trained operators.

* Abstract of paper presented before the Natural Gas Department at the A. G. A. Convention, Atlantic City, N. J., Oct. 28, 1934.

By LEON J. WILLIEN

Operating Gas Engineer, Byllesby Engineering & Management Corp., Chicago, Ill.

4. Produce a gas that would be satisfactorily interchangeable with natural gas in the majority of customer appliances.

I believe that these qualifications are essential wherever standby gas equipment is needed and shall discuss each one separately.

Time Required To Put Equipment into Operation

The relative speed with which a water gas set can be heated with solid fuel or oil is a debatable question. In 1928, when the Louisville Gas & Electric Company made 872 B.t.u. gas, four 12-ft. sets were brought to operation from cold condition in three hours with solid fuel. In September, 1933, when the natural gas supply was cut off in Denver, two 11-ft. sets equipped with the refractory screen process were brought to operation from cold condition in five hours with oil. Improvements installed since this emergency operation have reduced this to three hours. With butane- or propane-air gas it should be possible to produce gas within 30 minutes or less. The only heating required is to produce steam or hot water to vaporize the liquid. The Jones oil gas sets on the Pacific Coast require several hours to bring them into operation from cold condition. For that reason one or more sets are continuously kept in a heated condition so that they can be put in operation in a very short time.

Capacities

When 872 B.t.u. gas was made in Louisville in 1928 with four 12-ft. water gas sets, the thermal capacity or B.t.u. per hour was practically the same as when making 550 B.t.u. carburetted water gas. With the Jones oil gas sets at San Diego and San Rafael, California, the capacity of the sets in cu.ft. per hour was about 30% higher when making high B.t.u. oil gas than when making 550 B.t.u. oil gas. These results were duplicated in December, 1932, when the Pacific Gas & Electric Company operated practically all of its oil gas plants on high B.t.u. gas to augment its gas supply during an extreme cold spell.

After equipping two 11-ft. water gas sets at Denver with the refractory screen process, preliminary tests established the

combined capacities of the sets at 350 M cu.ft. of 1,000 B.t.u. gas per hour, the same as the normal rated capacity of an 11-ft. water gas set for 550 B.t.u. water gas. When the Denver natural gas supply was cut off in September, 1933, the refractory screen process carried the load for 42 hours. The last 16 hours of this period gas was made at a rate of 400 M cu.ft. per hour.

Test runs with the recirculated oil gas process on a 10-ft. water gas set showed the same thermal capacity as when making 550 B.t.u. water gas.

Tests made in Mason City, Iowa, in the Spring of 1933 indicated that a straight 1,000 B.t.u. oil gas can be made in a standard three-shell water gas machine using coke for fuel and heavy oil for gas making at a rate in M cu.ft. per hour of about nine per cent less than the rate of making 600 B.t.u. water gas when using coal as generator fuel. A 1,000 B.t.u. carburetted blue gas was made at a rate approximately 3½ per cent greater than when making 600 B.t.u. water gas with coal. It was believed that higher capacities may be realized with either method of operation (making oil gas or carburetted blue gas) when using gas oil instead of fuel oil.

The only additional data on capacities when making high B.t.u. gas is on making 800 B.t.u. gas. The Chicago By-Product Coke Company has made more high B.t.u. gas than any other company in the country. They report that 800 or 900 B.t.u. gas (carburetted blue gas) can be made with an 11-ft. water gas set at a rate of approximately 160 M cu.ft. per hour without undue difficulty.

The Peoples Gas Light & Coke Company of Chicago made 835 B.t.u. gas in an 11-ft. Williamson set at a rate of approximately 150 M cu.ft. per hour. The Laclede Gas Light Company in St. Louis with an ignition arch in an 11-ft. back-run water gas set made 800 B.t.u. gas at a rate of from 114 to 121 M cu.ft. per hour.

Calculations based upon the results of the tests made in San Diego and San Rafael, California, in the Spring of 1932 indicate that a 975 B.t.u. straight oil gas can be made in a standard 3-shell water gas machine using coke in the generator and gas oil in carburettor at a rate equal to 89% of the rate of making 550 B.t.u. water gas. This rate can undoubtedly be increased by spraying oil onto the top of the fuel bed in the generator.

Butane- or propane-air gas can be produced at a rate for which the equipment

is designed. Such equipment can be designed for any rate of production desired.

Labor Requirements

The various processes for making a high B.t.u. standby gas with a water gas machine or an oil gas machine require trained operators for operating the machines. Processes using solid fuel require additional labor for fuel handling and clinkering for which it may be necessary to use untrained men. For this reason some gas engineers object to the solid fuel processes because they believe that it entails keeping men on the payroll which would not be necessary with a process using liquid fuel. I do not believe that the use of a solid fuel process will entail keeping extra men on the payroll. There is no reason why the street gang of the distribution department cannot be used for clinkering and fuel handling. When standby gas is needed, the period of operation is short and the use of the street men at such a time should not disrupt the distribution department. I know of one plant that has used the street men for clinkering during peak operations for several years. The period of such operation varies from one to five days.

Operating Technique

In the development of the various processes for making high B.t.u. standby gas, attempts have been made to maintain the same operating procedure used when making 550 B.t.u. carburetted water gas. While it has been possible to do this to a certain extent the operating technique when making high B.t.u. gas is somewhat different from standard water gas operation. A 550 B.t.u. carburetted water gas contains approximately 20% oil gas whereas a high B.t.u. gas contains about 80% to 90% of oil gas. Since the cracking of oil is influenced largely by the cracking temperature, a more uniform temperature should be maintained when making a high B.t.u. gas than with standard water gas practice. It was evident during the tests on making 900 B.t.u. gas in April, 1928, by the Louisville Gas & Electric Company that a temperature variation of more than 50° F. in the superheater materially affected the B.t.u. and composition of the finished gas. All subsequent work on the production of high B.t.u. gas has proven the necessity of maintaining a proper heat balance. Set operators should, therefore, be trained accordingly.

With the oil gas sets used on the Pacific Coast the only changes in operation when making a high B.t.u. gas as compared to the operation when making a 550 B.t.u. gas, are:

1. Use Diesel oil instead of fuel oil. Diesel oil is practically the same as a good grade of gas oil used in water gas.
2. Use a shorter operating cycle. The blow period used when making 550 B.t.u. oil gas is eliminated, making the operating cycle about 23 per cent shorter.
3. Shutdowns for cleaning out the washbox are not necessary.

4. B.t.u. of the gas is controlled by the temperature of the gas as it passes through the offtake connection between the set and the washbox.

The temperature of the gas passing through the gas offtake pipe at the top of the superheater has been used in one or two cases when making a high B.t.u. gas in a water gas set. The temperature of gas at this point proved to be very helpful in operating. I wish to recommend such a procedure when using water gas sets. Standard water gas operation is based largely on the temperature of the checker brick in the superheater. It does not follow that the temperature of the gas is the same as that of the checker brick. The actual temperature of the gas is an important guide as to the quality of the oil gas produced.

Tar

In cracking oil to make 800 B.t.u. gas, considerable lampblack is formed which increases the tendency to form troublesome emulsions. As the B.t.u. of the gas made increases, the production of lampblack decreases, which reduces the tendency to form emulsions.

Compared with normal operation making 550 B.t.u. water gas, the tar production is considerably increased when making high B.t.u. gas. It varies from one to two gallons per M cu.ft. of gas made. The handling and disposing of the tar is a problem. With the recirculated oil gas process it is used for heating the checker brick. With an oil gas machine it can be used in place of the "Heat Oil" and under the boilers. Even if the tar is used for heating in place of oil there will be a surplus of tar because the production exceeds the amount required for such a purpose.

Materials Used

The following is a tabulation of the approximate quantities of materials used per M cu.ft. of standby gas made by the different processes:

B.t.u.	Make Oil Gals.	Fuel or Heat Oil
550 carb. water gas.....	3.0	30.0 lbs.
850 carb. water gas.....	8.6	32.0 lbs.
1,025 carb. water gas.....	12.0	25.3 lbs. Mason City tests
1,000 oil gas.....	12.9	24.5 lbs. Mason City tests
1,050 oil gas, recirculated oil gas process	10.8	2.7 gals. tar
1,000 oil gas, refractory screen process	10.0	1.0 gals. oil, Denver operation, Septem- ber, 1933
955 oil gas, Jones oil gas set....	12.0	1.4 gals. oil, San Rafael tests
1,100 butane-air gas.....	10.8	
1,100 propane-air gas.....	12.6	

Production Cost

The labor and miscellaneous expense for high B.t.u. standby gas should be approximately the same as for 550 B.t.u. carburetted water gas. Since the quantity of oil used for standby gas is three to four times that used for 550 B.t.u. carburetted water gas, the final cost of the standby gas is much higher.

Utilization

The tests made at San Rafael, California, in May, 1932, were the first large scale tests made on the production and utilization of a high B.t.u. gas as a substitute for natural gas. The gas was made with a standard 12-ft. 2-shell Jones oil gas machine and distributed to 9,500 consumers whose appliances were adjusted for natural gas.

These tests indicated that the specific gravity and chemical composition of a high B.t.u. manufactured gas rather than its B.t.u. were the determining factors in the ability to use such a gas as a substitute for natural gas. From the inspections made of 3,569 appliances on a house to house survey, it was evident that for equal heating values, an oil gas required a higher ratio of primary air to theoretical air than natural gas for good combustion. It was believed that the increased amount of primary air required for the oil gas was due to high percentage of illuminants in the oil gas.

Later tests made at San Diego and Los Angeles checked the San Rafael results in that the oil gas which proved to be the best substitute for the natural gas was one having the same specific gravity as the natural gas, although the B.t.u. of the oil gas was 10 to 15% lower than the natural gas.

In practically every case where a manufactured standby gas has been supplied to the consumers it has been found that improper utilization of the gas was due largely to improper adjustment of the gas burners for natural gas.

It is my opinion that a straight oil gas is a better substitute for straight natural gas than a mixture of oil gas and blue gas. (An oil gas made with a carburetted water gas set, the refractory screen process, or a Jones oil gas set, will contain a small amount of blue gas.) An oil gas of any given B.t.u. has a fairly definite specific gravity and composition.

Calculations and laboratory tests made

on the ratio between the primary and theoretical air required for proper combustion of oil gas show that this ratio decreases with the B.t.u. This is logical because as the B.t.u. of the oil gas decreases, the specific gravity and the percentage of unsaturated hydrocarbons decreases and the percentage of hydrogen increases while the percentage of satu-

rated hydrocarbons remains fairly constant. These changes seem to be in the proper direction.

Butane- or Propane-Air Gas

In 1929 the Louisville Gas & Electric Company installed butane storage tanks for enrichment of low gravity water gas at times of peak loads and for the production of a standby gas. This was probably the first installation of this kind for that purpose.

In 1933 the St. Louis County Gas Company at Webster Groves, Missouri, installed butane storage for the enrichment of carburetted water gas to 925 B.t.u. for replacing the normal 800 B.t.u. mixture of manufactured gas and natural gas.

This year The Peoples Gas Light & Coke Company of Chicago installed butane storage for the enrichment of coke oven gas to 800 B.t.u. for standby service.

Early this Spring, Mr. Harritt, superintendent of gas production, made a few small batches of butane-air and natural gas in order to observe the combustion characteristics in appliances adjusted for natural gas. This preliminary work indicated such vast possibilities that the scope of the study was increased with the aid of C. C. Brown, chief engineer of the California Railroad Commission.

Batches of butane-air gas and mixtures of butane-air gas and natural gas were made and used in the following appliances which were adjusted for natural gas:

1. Hoyt Instantaneous Water Heater
2. A-B Range
3. Clow Gas Steam Radiator
4. Raco Gas Radiator
5. Ward Magic Way Floor Heater
6. Humphrey 10 Radiant Heater
7. Clark Jewel Range with Oven Control
8. Fraser Central Hot Air Furnace
9. No. 3 Ruud Instantaneous Water Heater

Flame characteristics on the various appliances were closely observed to determine what reaction may be expected from the commercial use of mixed gas or butane-air gas straight.

The best results were obtained with a 1,170 B.t.u. butane-air gas although it was apparent as the work progressed that the air content of the butane-air gas, rather than the B.t.u. controlled the visible characteristics of combustion. The best results were obtained on mixtures where the butane-air gas contained 54 to 56% of air.

Test Conclusions

The conclusions drawn from these tests are:

1. That it is entirely practical to produce a suitable gas from butanes, propanes or mixtures of the two diluted with air, to supplant or augment the supply of natural gas. Whether used straight or mixed with natural gas a high degree of satisfactory utilization can be obtained.

2. That for limited amounts, the use of butane-air gas is far more economical than starting up apparatus for the production of oil gas. Under existing costs of fuel the production of such butane-air gas would compare very favorably with the cost of Diesel oil gas over long periods and leave no by-products to be taken care of.

3. That storage, transportation and production of butane are the only adverse factors in butane-air gas as standby for natural gas.

4. That butane-air gas of 1,150 to 1,200 B.t.u. made from a 50-50 mixture of butanes and propane proved to be the best substitute in the tests.

5. That a mixture containing not over 54 per cent air, regardless of B.t.u. value is presumed to give equal results.

Similar tests were made by the Northern States Power Company at Faribault, Minnesota, using propane-air gas mixtures. The following equipment was used in the tests:

1. Round Oak Range with Oven Regulator
2. Rutz Pilot
3. Magic Chef Range Burner
4. Hoffman No. 40 Tank Heater
5. Welsbach 7 Mantle Space Heater
6. Janitrol X-1 Conversion Burner

These appliances were adjusted for 1,000 B.t.u. natural gas with a specific gravity of .70.

The conclusions drawn from these tests were:

1. That an 1,150 B.t.u. propane-air gas will give satisfactory standby service for 1,000 B.t.u. natural gas of .71 specific gravity. The limits of the range of mixtures which will give satisfactory service are 1,100 to 1,250 B.t.u.

2. That service pressures can drop to 2.8" with propane-air gas mixtures with satisfactory combustion on equipment adjusted for 5".

3. That service to the customer with appliance adjustments and pressures as they are at the present time should be satisfactory with propane-air gas when distributed at similar pressures.

4. That mixing a satisfactory propane-air gas with any proportion of natural gas will not result in any difficulty in utilization.

5. That propane-air gas will give satisfactory service on house heating equipment.

6. That the propane-air gas has a more stable flame than natural gas; it lights easily, burns with a strong clean flame, and has a slight odor similar to that from a kerosene burner. The flame lifts and blows from the burner with too much air, but will not flashback.

The first impression one receives from the idea of substituting such a high gravity gas is whether a proper B.t.u. input to the appliance can be maintained. This point was carefully checked while making

some efficiency tests at Faribault, Minnesota. With the 1,150 and 1,200 B.t.u. propane-air gas, which proved to be the most satisfactory mixture, the decrease in the B.t.u. input amounted to 10.1% and 2.7% respectively, while the increase in time was 10.4% and 5.3%. This time increase was not considered to be a serious factor, since it is not great and since the gas is to be used for standby purposes only. The efficiencies were practically the same as natural gas.

Butane- or propane-air gas should be the ideal standby gas for small gas companies supplying natural gas. It has the following advantages over other known processes or methods for making standby gas:

1. Low cost of installation.
2. Minimum labor requirements.
3. Ability to start up and reach maximum production in a few minutes.
4. No tar or by-products to handle or dispose of.

The only disadvantage is the loss of butane air or propane from storage through leakage. If care is exercised in the construction and installation of the equipment the loss from leakage should be negligible.

If the gas is to be compressed before distribution, propane should be used as butane would condense, especially in cold weather.

Conclusions

1. That there are several processes and methods available for the production of a high B.t.u. standby gas.

2. That existing carbureted water gas plants and oil gas plants can be used for the production of a high B.t.u. standby gas. A few modifications are necessary for any one of the available methods or processes.

3. That the best type of standby gas to use depends upon the type and character of the gas normally distributed.

4. That high B.t.u. mixtures of propane or butane and air are suitable substitutes for straight natural gas.

5. That whatever method or process is used for standby gas, preliminary test runs should be made so that operations can be started without hesitation when an emergency arises which requires the use of standby gas.

APPENDIX

BIBLIOGRAPHY OF OIL GAS PROCESSES

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ACCOUNTING SECTION

E. B. NUTT, Chairman

H. W. HARTMAN, Secretary

A. S. CORSON, Vice-Chairman

Better Letters*

By R. C. Cox

Correspondence Adviser,
Philadelphia Electric Company

THE courtesy, understanding, and intelligence, or the reverse, of every letter sent to customers by a public utility company influences the customer's opinion of that company. The good will of these customers rises or falls in accordance with their reactions to these messages.

Clear, logical, and friendly letters produce good results. Letters poorly worded and poorly punctuated produce bad results—at least they do not inspire confidence in the company they represent.

Naturally, every utility wants its customers to be favorably impressed by the letters it sends them; to have its customers feel that the letters have been written by considerate and attentive representatives representatives who are really interested in seeing that all inquiries are carefully and intelligently handled.

A survey of correspondence in one large utility company showed that this desirable situation did not obtain. Instead, it was found that many of the letters were not exempt from the general deficiency in letter-writing which existed then—and even now—in practically every large corporation. Briefly, it was found that there was room for considerable improvement.

Campaign Plan

In order to bring about this improvement, an active campaign for better letters was started. The immediate objective of this campaign was to improve public relations, by:

1. Stimulating an interest in better letters;
2. Training correspondents and stenographers in
 - a. Better written expression, and
 - b. Courteous handling of correspondence
3. Encouraging individuality in letter-writing
4. Standardizing the form of letters

The first step in this program was to issue a "Better Letters" booklet in order to arouse an interest in letter-writing and to pave the way for the specific instructions in the supplementary bulletins which were to follow.

Later, two series of supplementary correspondence bulletins were started; one for the dictators and the other for stenographers and typists.

Shortly after the first of these supplementary bulletins was issued, an inspection of correspondence was started. It has continued since that time. This inspection is being made by a correspondence adviser.

* Contribution of the Customer Accounting Committee.

It covers all letters written in the company's commercial offices, where probably upwards of 95 per cent of all letters to the company's customers originate.

In order to make an inspection, the correspondence adviser selects a group of offices and asks the manager of each office to send him copies of all letters written in his office during a given period. The selection of offices is made arbitrarily, and without any advance notice to the managers concerned.

Inspection Period

At the end of each day during the period of the inspection, the extra copies of all letters written in the selected offices are mailed to the correspondence adviser. If he has no comments or suggestions to offer, the extra copies of the letters he receives are destroyed. Letters which are not up to standard are corrected and saved for discussion with the dictators and stenographers. Very good letters are also saved and returned, and the persons responsible are complimented for what they have done.

It has been found by experience that it is best to limit this work to the maximum number of letters which can be read and corrected during the morning hours, so that the correspondence adviser can spend the afternoon with the interested employees in their offices. In this way the work is handled currently, with a minimum of interference with the regular routine of the offices where the letters are being inspected.

While a fairly accurate estimation of the efficiency of the letters generally is possible through this daily checking of the correspondence, the effectiveness and completeness of an individual letter is not always apparent from reading the letter itself. For this reason, these correspondence inspections are not limited to checking copies of outgoing letters alone. In each office visited, the current mail is reviewed and answers are checked with inquiries received. In addition, spot checks are made of completed correspondence. This latter check offers an excellent opportunity to judge the efficiency of the letter-writing standards of the office. Many improvements have resulted from the correction of questionable practices found when reviewing completed correspondence in the file.

As soon as an inspection in one group of offices is completed, arrangements are made to have the letters from the next group

sent in. The work progresses in this manner until all offices have been covered, after which the whole process is repeated.

Company Experience

The correspondence of the company following this plan has been checked in this manner for almost three years. It is known now where the best letters are written and where it is necessary to coach certain employees whose letters are not quite up to standard. All of the objectionable "form" letters which had been used in many of the offices have been eliminated and replaced by approved letters. Many printed forms have been introduced to replace typed letters.

The first correspondence inspection was, of course, the most difficult one to handle, because it was necessary to eliminate many stereotyped expressions which had been in use. This difficulty was expected, however, and in each case the inspection was continued until the general tone of the letters was improved—in some cases for as long as two to three months.

The second inspection showed that definite progress was being made. While it was necessary to duplicate some of the work of the first inspection, most of the erroneous practices which were corrected in the beginning were not evident at the time the second inspection was made, and it was possible to establish an even more exacting standard.

The third and subsequent inspections showed even better results.

At the close of each inspection, a report of the work is made to the interested executives. This report contains not only pertinent comments as to the progress being made in conducting the correspondence, but also samples of the actual letters written during the period of the inspection.

"Representative" Letters

One outcome of these checks was the development of what may be termed "representative" letters. There are many types of letters which must be written almost daily in a public utility office. It was found that in some offices a very good letter would be used for a certain subject, while in other offices a similar inquiry would not receive the same careful consideration. It was also found that certain policies were not being uniformly applied. After making a careful study of the letters originating in all district and division offices, there were developed and distributed two sets of representative letters—one of general letters and the other of collection letters—in order to give all dictators an opportunity to see

what was considered the best way to handle the various subjects covered, and to establish uniform methods of handling certain routine inquiries.

Virtually all common types of complaints and inquiries are dealt with in these letters. The effectiveness of the explanations used in these representative letters is gauged by the known reactions of the readers. Unfavorable reactions are avoided when possible by revising any letter which does not produce the desired effect. The majority of the more commonly used explanations of company rates, rules, and practices have been improved consistently in this way, with the result that the current issue of revised representative letters is complete and up to date.

With this collection of tested explanations to draw upon, the average correspondent finds it exceptional to receive any inquiry that cannot be satisfactorily answered in one letter. This is a distinct advantage, in that it saves the customer's time and patience, and permits efficient organization and dispatch of the work within the company.

These representative letters were not prepared as form letters to be followed indiscriminately, nor are they being used in that way. They are being used carefully, and it has been found that they are of considerable help.

Benefits

It is believed that the plan has been most successful. In the beginning there may have been some doubt as to the possibility of enlisting the complete co-operation of all dictators and stenographers in making the improvement sought, but the response has been most gratifying and has dispelled any doubts as to the complete success of the plan. In every office the work has been and is receiving the most hearty co-operation, and the inspections are welcome. In fact, in some cases the correspondence adviser has been asked when leaving an office after completing an audit to hurry back. Stranger still, there are some dictators whose letters have been checked continuously for months, at their own request.

The specific benefits which have resulted from this campaign after three years of correspondence supervision may be summarized below:

1. Better public relations have been obtained, as evidenced by hundreds of friendly letters from customers expressing appreciation of the genuine interest in their inquiries;
2. An active interest in better letters has been brought about;
3. The letters have been standardized as to form;
4. The general tone of the average letter has been greatly improved;
5. A desirable uniformity of understanding of company policies and practices has been established, resulting in uniform handling of inquiries from customers, regardless of the office involved;
6. Greater courtesy and consideration is evident in the letters.

EMPHASIZES PRACTICAL VALUE OF A. G. A. SERVICES

By EDWARD F. MCKAY, Secretary
Oklahoma Utilities Association

The work of the Oklahoma Utilities Association is aided and facilitated daily because of the affiliation of our Association with the American Gas Association.

The Oklahoma Association includes all branches of the utility industry,—electric, gas, electric railway and telephone. A major reason for its existence is the furnishing of prompt and dependable information to the members of the several branches of the utility industry on developments affecting their respective industries or the utility industry as a whole. This includes information on decisions and rulings of courts and commissions and of governmental administrative agencies, and information concerning any phase of utility operation.

As everybody knows, this information comes from a multitude of sources. It is impossible for any except the largest utility companies to keep in touch with all or a majority of these information sources, and even the largest companies restrict their contacts of this character largely to sources which logically yield information applicable directly to the branch of the industry to which the company belongs. This leaves to our Association a large measure of responsibility in acquainting our members with developments affecting the utility industry generally, and if our service is efficient, our members will receive from us their first information concerning most of the matters upon which we report.

As already stated, our efficiency is increased greatly by our close contact with the American Gas Association. This applies to our service to all our members as well as to our gas company members. Particularly valuable are the statistical and rate services of the A. G. A. and its Information Service Letters. Frequent situations arise with individual companies, concerning which they need specific reliable information which we are able to supply from our statistical files, for which otherwise our members would have to depend upon governmental agencies with such delays as to impair seriously the value of the information when received.

We are fully fortified always as to rates applicable in Oklahoma, but frequently have need for information concerning rates in other states, which information is available in the A. G. A. rate service.

We receive immediate information on court decisions affecting all branches of the utility industry, but have found the A. G. A. service both prompt and comprehensive in reporting and interpreting decisions affecting the gas industry. We know that executives of our member companies often receive from our Association information on decisions affecting their business before their own attorneys have it, and we are sure that interpretations of gas decisions in the A. G. A. Information Service are of more practical value to the gas company executive than the company's attorney's interpretation would be, and reaches the executive earlier.

Other services of the American Gas Association to gas companies, made available through the Accounting, Commercial, Industrial Gas, Manufacturers and Technical sections, and through subdivisions of these sections, such as the home service department of the Commercial section, suggest further value of the A. G. A. to the gas industry, which is incalculable, and which services are not otherwise available.

The regrettable phase of utility association service is that so few member companies take full advantage of what is offered. The utility business, in each of its branches, is so closely related to affairs generally in whatever field investigation of this relation might be made, and the quantity or volume of information accumulated in the files of these associations, either state or national, so extensive, that the use made of these associations by their members could and should be many times what it is.

If this brief discussion of the relation between the Oklahoma Association and the A. G. A. results in increased use of the facilities of either association by its members, it will have served its purpose.

COMMERCIAL SECTION

N. T. SELLMAN, Chairman

J. W. WEST, Jr., Secretary

F. M. ROSENKRANS, Vice-Chairman

Electric Competition in Mississippi

THE Mississippi Public Service Company was the first gas company to meet the TVA in competition. This was at Tupelo, Mississippi. This town, having a population of about sixty-five hundred, is served with natural gas from a local field some thirty miles south of Tupelo. This field also serves Amory and Aberdeen, Mississippi. Amory has been receiving gas for about nine years. It was not until four years ago that the pipe line was built to Tupelo.

Prior to February of this year, Tupelo was served with electricity through a municipal distribution system purchasing power from the Mississippi Power Company. The power company served the large power customers directly.

On February the seventh, the TVA took over the lines of the Mississippi Power Company and the City began the purchase of energy from the TVA and served all customers, including the large power users.

Early in the year, we realized that we were going to have severe competition from the TVA and made our plans accordingly. In March we held a cooking school in co-operation with the hardware and furniture dealers and plumbers followed by a campaign for range sales with very gratifying results.

Tupelo Survey

The City made a survey of electric appliances in use and the TVA sent a corps of nineteen men who went over the town twice for the purpose of selling the electric idea. There was little or no effort made at actual sales during this time. In May, the TVA rented a large double store building and spent many thousands of dollars converting it into booths for an electrical display, and to be used at no cost to the dealers. This building was formally opened on Tuesday, May the twenty-second.

On the following Saturday there was a big demonstration and parade and Mr. Lilienthal, one of the directors of the TVA, addressed a mass meeting.

On Saturday, May the nineteenth, prior to the opening of the TVA display, we came out with a large newspaper advertisement offering gas ranges and automatic water heaters to be sold the following week. The result was that during that week, we sold twenty-six ranges and twenty-one water heaters. So far as we could determine there were no actual sales of electric ranges and water heaters by the electric dealers.

Paper delivered before the Commercial Section, A. G. A. Convention, Atlantic City, N. J., Oct. 31, 1934.

By L. O. GORDON

Peoples Light & Power Co.,
New York, N. Y.

From January first to October thirteenth, we, together with the dealers, have sold 101 ranges, 62 automatic storage water heaters and 21 coil heaters. We have also sold 14 refrigerators, besides 266 space heaters and many miscellaneous appliances.

There are at present 464 gas ranges and 303 gas water heaters in use in Tupelo.

We have recently made a house-to-house canvass of the town to determine the actual number of installations of electric ranges and water heaters. There were in use 32 electric ranges installed prior to the coming of gas. Our recent survey showed a total of 88 electric ranges in use, including those installed prior to the advent of gas, making a total of 56 ranges installed since the coming of TVA. There may have been additional ranges sold but not installed. The only check we have is on installations. We also found a total installation of 18 electric water heaters.

We did not attempt to make a house-to-house canvass on refrigerators, but to the best of our knowledge gained from various sources, there were in use prior to March first last, 207 refrigerators and there are now 501 refrigerators in use, showing a total sales in the recent months of 294.

Gas Company Activity

While an official of the TVA made the statement that 300 gas ranges would be replaced with electric ranges in 90 days after the new electric rates went into effect, none have been replaced to date.

In our sale of ranges and water heaters, we applied the standard methods of campaigns. In the special sale we put on in May, we brought in from our entire territory all of the ranges and water heaters that were not of the 1934 design and marked the prices down to cost, including freight, installation, salesman's commission and advertising, plus 20% to comply with the requirements of the retail code.

We have installed since a large number of automatic water heaters on the rental purchase plan.

We conducted a slogan contest for about three weeks offering prizes for the best slogan that would indicate why natural gas is the best fuel to be used in the home. We gave away a four-foot Electrolux refrigerator to the person making the closest

guess to its gas consumption over a period of a month. The refrigerator was installed in the display window with the sealed connections and sealed dial cover. Splendid response was received from the public on both the slogan contest and the guessing contest and much desirable publicity obtained.

Our appliances have been sold on terms that would pay them out in about 36 months at a maximum. This compares with 48 months applied by the EHFA on electric appliances where two or more appliances are purchased.

Guarantee Plan

We adopted one plan that we feel was beneficial, although it is not always possible to determine the direct benefits of a sales plan. Realizing that there is practically nothing to wear out or burn out on a gas range, as compared with the burning out of heating elements on an electric range, we have given every purchaser of a new range a five-year guarantee against worn out or burned out parts. We exclude from any guarantee the enamel on the range. Our warranty reads as follows:

"We warrant to the original purchaser the gas range sold by us and all parts thereof to be free from defects in material or workmanship under normal use and service.

"Our obligation under this warranty is limited to the replacement without cost to the purchaser of all parts found to be defective and all parts burned or worn out in normal service. There is specifically excepted from this warranty any enameling which is not guaranteed by the manufacturers, or any electrical attachments."

"This warranty is for a period of five years from date of sale and subject to our examination showing to our satisfaction that the parts defective are burned or worn out under normal service."

One of the range manufacturers hearing of this guarantee wrote us a letter stating that they would support us by making us a similar guarantee. I think we have little to fear in the way of cost of replacements under this guarantee and it is one that the electric range manufacturers or dealers would hesitate to make.

Early in our campaign, we recognized that the extremely low rates offered by the City under their TVA contract and the

immense amount of ballyhoo that would and did take place with reference to electric cooking and water heating would gain a considerable amount of business for the City. We did not discount the enemy. We have not expected to get all of the business, but I think we have gotten our fair share.

Handicaps to Gas Merchandising

We have two great handicaps in the promotion of gas appliances. The first is the long terms granted by the EHFA which we have to meet and which makes financing very difficult, particularly for the small company. The small company can do this for a while, but it eventually reaches the end of its rope. To meet this situation, there is a great need for some financing agency, private or public, that will take long term paper at a low rate of interest.

The second handicap is the electric refrigerator. You are all aware of the fact that the TVA model of refrigerator retailed for about \$80.00. The gas refrigerator of comparable size would cost us at the factory about 10% more than the retail price of the electric refrigerator. To this must be added freight, cartage, advertising, salesman's commission and overhead without allowing anything for profit.

The large sale of refrigerators in Tupelo is largely due to the low price and the publicity given by the electric refrigerator manufacturers. The sale of refrigerators assisted greatly in the sale of ranges as the customers would get a better rate on their electric service and longer terms on the purchase of the appliances by buying the two.

If we had had a gas refrigerator comparable in price, we, unquestionably, would have sold a large number of refrigerators and also would have sold many more gas ranges in place of electric ranges.

The electric refrigerator is a problem which every gas company is going to have to face and unless gas refrigerator manufacturers will bring out a refrigerator comparable in price, the gas companies are going to lose a large volume of business that they would otherwise get.

In order to try to forestall the sale of so many refrigerators, we advertised that we would put out a limited number on a rental of \$3.00 per month. We installed some 8 or 10 refrigerators on this basis. We recognize that it is not perhaps a very satisfactory method of installing refrigerators, but we felt justified in doing so to a limited extent in this instance.

Tupelo Consumption Analyzed

Great claims are being made by the TVA and the City of Tupelo for their large increase in consumption during the past few months. Their recent bulletin does show a large increase in kilowatt hour consumption. They show an average kilowatt hour consumption per residential customer in March of 42 and an average consumption of 70 in July. They show the average kilowatt hour consumption per commercial

customer in March of 183 and in July of 258.

Tupelo has, for the size of the community, a large industrial power business. Through the City's taking over this business, formerly served by the Mississippi Power Company directly, they have about offset the decrease in revenues sustained through the reduction in rates.

Tupelo is an unusual small community, in that it has this large power business. Few southern communities of this size have this industrial business to provide revenues.

The town of Amory recently connected up with TVA and shut down a municipal Diesel engine plant. It is conceded that about the only saving in operating expenses that the City will make will be the elimination of fuel and lubricating oil and engine maintenance. There is no industrial business of consequence in Amory to provide revenues replacing those lost through greatly reduced residential rates.

Factors in Increased Consumption

Getting back to the question of increased residential and commercial consumption in Tupelo, there are two factors that are responsible for this condition. One is the natural result of decreased rates which we all recognize. Our own experience has taught us that as we reduce our rates, the customers' consumption increases. The other factor is the improved economic condition of the people of Tupelo. The cotton mills and garment factories are running a great many more hours this year than they did a year ago with the resultant re-employment of a large number of people. The textile code and the cotton goods' code increased the pay of the employees of these mills substantially.

The money which the Government has poured into the South for cotton curtailment and a rise from 4½ to 12¢ a pound for cotton has greatly improved the economic condition of the entire community. The rise in number of customers is, undoubtedly, due to people using electric service who a year ago could not afford it. The better economic conditions with the long terms of payments for appliances has encouraged people to buy appliances in larger numbers and to be freer in the use of electricity.

Tupelo is being used by those interested in the TVA plan as a typical example of what can be accomplished in any community. This is not correct. The various conditions which I have outlined are so different from the average community that the results obtained so far in Tupelo cannot be used as a yardstick elsewhere. They will not apply to Amory which not only has little industrial load, but is now well equipped with gas appliances. Amory has had gas for nine years and a very high saturation of gas customers, there being 589 meters installed in a population of about thirty-two hundred. There are now in use 515 gas ranges and 348 gas water heaters.

To date, there have been only 3 electric ranges sold in the town, one of which was a used range. One range replaced a gas range, but was removed and the gas range re-installed on receipt by the customer of the first electric bill.

Months ago we started a campaign for replacement of old and obsolete ranges with the result that since January first we have sold 28 ranges. In addition we have installed 21 water heaters. By getting these ranges replaced, we feel that the electric dealers will have the utmost difficulty in pushing gas out and replacing with electric appliances.

Need for Coordinated Action

This TVA competition requires the interest and assistance of every gas company no matter where located. While the TVA is designed to be a yardstick for the electric utilities, it is also going to be a yardstick for the gas industry. It is creating a new competition which must be met with new methods and the fullest cooperation of all the gas industry. The most remote gas company cannot escape the effect of TVA and the great efforts being made by the manufacturers of electric appliances to popularize electric usage.

The new low prices of electric appliances are a challenge to both the gas utilities and appliance manufacturers. Heretofore, the gas industry has enjoyed the advantage of lower priced appliances, but that advantage no longer exists. Great strides have been made in modernizing gas appliances and the gas industry can meet the electric dealers on more than even terms in this respect.

Where natural gas is available, the existing rates will enable the gas companies to provide heating service of any character at a lower cost to the consumer than is possible even under the low TVA electric rates. The manufactured gas companies in the TVA territory are not so favorably situated.

A great danger to the gas industry is that the vast amount of publicity issued by the TVA and the electric appliance manufacturers and later by governmental authorities in territories to be served by additional Federal power projects will convince the public that gas is outmoded and that electricity is the modern and economical means of heating. Unless some coordinated action is taken by the gas industry to combat this propaganda, the gas industry will suffer an irreparable loss.

The Tennessee Valley is only one of several similar projects that will cover large areas in various sections of the country and make inroads on the gas industry. These tremendous power plants, costing hundreds of millions of dollars, now building and to be built later, must be provided with loads. The Government will spare no expense to provide the load even if it means pushing the gas industry to one side.

The gas industry should awake to its danger and take such coordinated steps as may be necessary to meet this new competition. This cannot be left to the gas utilities

(Continued on page 411)

INDUSTRIAL GAS SECTION

F. B. JONES, Chairman

C. W. BERGHORN, Secretary

J. F. QUINN, Vice-Chairman

Gas Industry Has Large Display at National Metal Exposition

*A.G.A. Headquarters' Booth*

THE sixteenth annual National Metal Exposition was held in Commerce Hall, New York City, October 1-5, 1934. This exposition was sponsored by the American Society for Metals in collaboration with the American Welding Society, the Wire Association and the Iron and Steel Division and Institute of Metals Division of the American Institute of Metallurgical Engineers.

The National Metal Exposition is recognized by industrial gas men as being of great importance to their business. It is the most important exposition of the year to those in the steel industry, especially in connection with heat treating of steel and alloy metals. Because of this fact, and in accordance with the practice in previous years the Display and Contact Committee of the American Gas Association arranged for a special Industrial Gas Section in the National Metal Exposition, taking a space which totalled slightly over 7,000 square feet of booth area. This space represented approximately 16% of the total net booth area in this exposition and compares with 5,500 square feet in the 1933 exposition in Detroit.

The exposition was held in New York City for the first time in its history of sixteen years. There had previously been no suitable exposition area available for a show of this size and character but with the completion of the Port of Authority Commerce Building, ideal facilities were obtainable. The exposition occupied the greater part of one floor in this building which covers an entire city block.

The attendance was carefully regulated and admission was only by ticket so as to control admissions and confine visits to a class of people who had real interest in the

By J. A. MALONE

Chairman, Committee on Display and Contact, Industrial Gas Section

equipment on display. Total registration of visitors at this show was approximately 20,000, which on account of the above control represented a selected group of interested persons.

On account of the location of this exposition in New York City and the widespread interest of gas companies from an industrial standpoint, participation was broader than is usually the case. The following gas companies cooperated with the American Gas Association in arranging for the exhibit in the Industrial Gas Section:

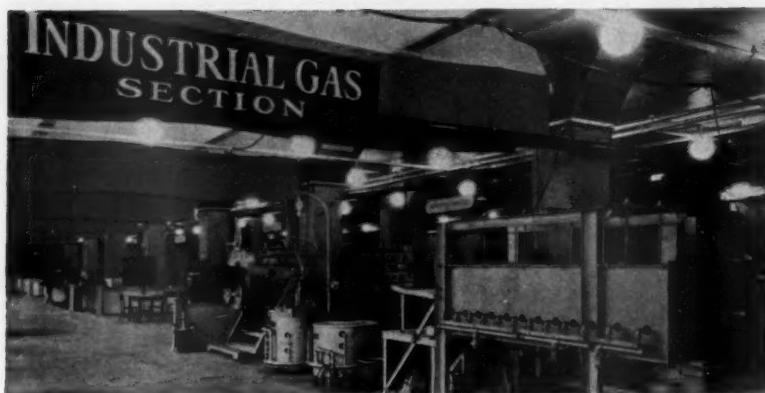
The Brooklyn Union Gas Company
Central Hudson Gas & Electric Corp.
Columbia Gas & Electric Corporation
Consolidated Gas Company of N. Y.
The East Ohio Gas Company

Elizabethtown Consolidated Gas Co.
Equitable Gas Company
Hope Natural Gas Company
Kansas City Gas Company
Laclede Gas Light Company
Lone Star Gas Corporation
Manufacturers Light & Heat Company
New York and Richmond Gas Company
North Penn Gas Company
Pacific Gas & Electric Company
The Peoples Natural Gas Company
Perth Amboy Gas Light Company
Public Service Electric and Gas Co.
Southern Natural Gas Corporation
Syracuse Lighting Company, Inc.

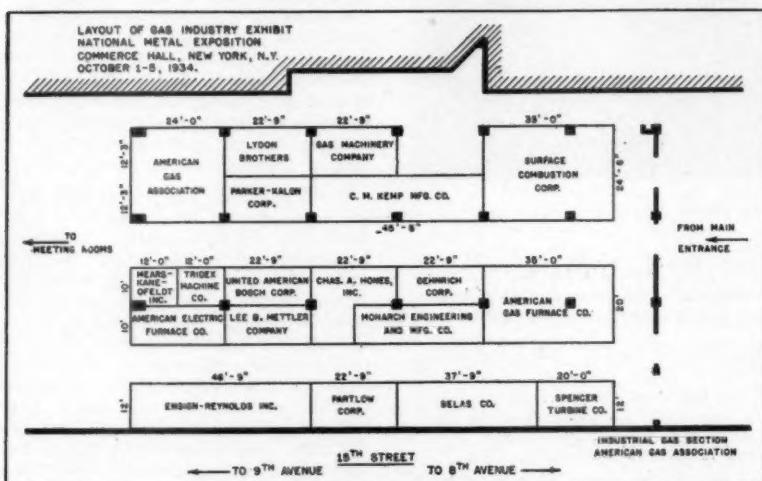
In the Industrial Gas Section there was one booth devoted to the American Gas Association, this being used as a headquarters' booth and meeting place. In this area there was shown a rotating display indicating different applications of gas to industrial heating. Six different views in diorama form were shown and the table rotated bringing each one of these scenes into a miniature stage setting. Each view remained stationary for one minute and then the table again rotated bringing on the next view. This display was loaned for the exhibition through the courtesy of F. B. Jones, Equitable Gas Company, Pittsburgh, Pa. Mr. Jones is chairman of the Industrial Gas Section of the American Gas Association.

In addition to the A. G. A. booth, there were eighteen different booth areas devoted to the display of the equipment of as many manufacturers of industrial gas appliances. A description of these individual exhibits follows. Comment during and after this exhibition indicates the show as a whole was highly successful and the In-

*View of Exhibit in the Industrial Gas Section*



Another View of the Exhibits



Arrangement of Exhibits in Industrial Gas Section

dustrial Gas Section was the most outstanding single part of the entire exposition.

American Gas Furnace Company

This company displayed heat treating machines and furnaces, burners and blow pipes. There was also shown new one valve control for maintaining automatic air-gas ratio at all rates of burning, this being applied to up-to-date oven furnaces, pot furnaces, etc., with insulating refractory linings. In addition the exhibit included two full muffle type continuous heat treating furnaces for the heat treating of metals in a controlled gas atmosphere, also a new Bell Type retort furnace for gas carburizing, nitriding, Ni-Carb-Casing, as well as hardening, tempering, annealing, etc. A rotary retort gas carburizer and models of new developments in heat treating equipment were also shown.

American Electric Furnace Company

This company showed a Juthe preheating gas furnace and a Juthe high-speed gas furnace, both being in operation and with atmospheric control.

Ensign-Reynolds, Inc.

In this booth there were displayed various types of high-pressure and low-pressure gas burners for industrial applications, gas compressors and a tenter frame burner unit. A modern dual heated stereotype furnace was shown in operation, also a dual heated electrotype furnace. These were complete furnaces equipped with automatic temperature control and automatic flue damper control.

Gas Machinery Company

This company showed an interesting set of photographs of their large industrial furnaces and other modern equipment for the gas industry.

Gebnrich Corporation

This company displayed their standard indirect gas-air heater with blower, in addition to which there was displayed a number of photographs of typical oven installations.

Chas. A. Hones, Inc.

This company showed, in operation, bench furnaces, soldering furnaces, soft

Parker-Kalon Corporation

Parker-Kalon Corporation

This company displayed their Convertible Rack and Basket Type Furnace. This was a completely hooded furnace for heat treating steel by cyanide or other salts, lead and oil, with mechanism enabling transfer of the work from bath to the tank by external operation of a geared crank.

Partlow Corporation

In this company's booth there was a complete display of automatic temperature controls and safety gas valves suitable for use in connection with all sorts of industrial gas applications.

Selas Company

This company displayed their combustion controller for furnace atmosphere control, gas carburizing, etc. There was also shown a number of burners for various industrial heating processes, including Selas refractory screen burners for furnaces.

Spencer Turbine Company

This company was located in the Gas Industry area and cooperated by furnishing low-pressure air for use in many of the

displays. In their booth they showed a new multi-stage Turbo compressor for handling corrosive gases and acid fumes. This was in addition to their regular line of Turbo compressors suitable for gas-fired furnaces. A midget blower for individual applications was also shown.

Surface Combustion Corporation

In this booth was shown a unit heater, a pot hardening furnace, high-pressure system; direct gas-fired air heater, completely enclosed low-pressure push, through type, with control unit; special controlled atmosphere high speed steel hardening furnace; automatic proportioning, one valve control industrial gas burning equipment of all types, high and low pressure and diffusion burners; gas carburizing, bright annealing, and clean hardened products heat treated in controlled atmosphere furnaces; photographs of furnace and burner equipment installations.

Tridex Machine Corporation

A Tridex gas-fired cleaning machine was on exhibition in this booth. This machine

included a gas-fired steam boiler, generating steam used in conjunction with a soap and warm water spray. This equipment is used for cleaning parts ranging from locomotives to small pieces contained in baskets, in addition to being particularly adapted for automobile washing.

United American Bosch Corporation

This company showed in operation their "M" type large volume water heater with tank, suitable for the heating of large volumes of water for industrial use. There was also displayed a domestic type heater and their new small Konerto heater.

Other Exhibits

Outside of the Industrial Gas Section there was several exhibitors who had displays in which gas was used in interesting applications. The American Electric Furnace Company showed an electric furnace for heat treating which included the use of gas for the control of furnace atmosphere. Babcock and Wilcox Company showed a very interesting demonstration to bring out the properties of their insulating fire brick.

Two gas-fired industrial furnaces of identical size were in operation, one lined with standard fire brick and the other with a new insulating fire brick. Each furnace was equipped with a recording gas meter also a recording potentiometer to show the substantial reduction in heating-up time and in fuel consumption secured by the insulating refractory.

G. S. Blakeslee and Company showed a degreasing machine using a chemical of the trichlorethylene type and this chemical was heated by means of steam brought over from a gas-fired boiler in the Industrial Gas Section. C. I. Hayes, Inc., had furnaces in operation using gas for the obtaining of suitable furnace atmosphere.

Madison Kipp Corporation displayed a new semi-automatic die casting machine especially designed to die cast zinc, lead and tin alloys at a rapid rate. This machine was heated by gas. Union Carbide and Carbon Corporation used a city gas and oxygen torch to heat up work in a lathe, demonstrating that certain of their alloy metals can be used as cutting tools even though the work be red hot.

Cooperative Gas Exhibit at Hospital Convention

THE 36th annual convention and exhibition of the American Hospital Association was held in the municipal auditorium, Philadelphia, September 24 to 28, 1934. It was described by the Association officials as being one of the most successful and best attended conventions ever held by them, there being over 10,000 visitors during this period.

All of the space in the municipal auditorium was filled by 179 exhibits and displays. The cooperative exhibit of the American Gas Association, The Philadelphia Gas Works Company, the Philadelphia Electric Company, the Detroit-Michigan Stove Company, and the Standard Gas Equipment Corporation was the largest single exhibit, and was the most attractively decorated.

The background of the display was influenced by modern trend in design, and consisted of a light tan cloth drop, above which, supported by yellow columns, was a canary yellow heading, which bore the names of the exhibitors, outlined in blue letters. On each of the four columns, there was a square capital, each with a transparent face, showing an illuminated symbolic gas flame. There were four discs at equal intervals, bearing appropriate slogans describing the advantages of gas for commercial cooking.

This was the first medical association convention in which the American Gas Association participated, and in view of the unusual interest shown by hospital executives in the gas cooking equipment display, it is believed that the exhibit served a most worth-while purpose. Exhibits in such fu-

By FRANK H. TREMBLY, JR.

Supervisor, Industrial Division,
The Philadelphia Gas Works Company

ture conventions should be sponsored by the American Gas Association and the local utilities.

In the center booth, the improved Blodgett Bake-Even Oven and a Quality Diet Kitchen Range were exhibited. The Detroit-Michigan Stove Company and the Standard Gas Equipment Corporation exhibited the following equipment:

Detroit-Michigan Stove Company

No. 4928-CX Garland Range
No. 4528-CX Garland Range

No. 4428-CX Garland Range
No. 1628-CX Garland Salamander
No. 631 Garland Broiler
No. 718 Garland Fryer
No. 3522-CX Garland Cafe Range
No. 3422-CX Garland Cafe Range

Standard Gas Equipment Corporation

No. 4751-YT Vulcan Range
No. 4748-YT Vulcan Range
No. 4763 Vulcan Fryer
No. 4744-Y Vulcan Broiler
No. 4708 Vulcan Salamander

Visitors to the convention readily saw the improvements that had been made in commercial cooking equipment within recent



Gas Exhibit at Hospital Convention

years, and were much impressed with the well-insulated ovens with thermostatic control, and the improved appearance and substantial construction of this new cooking equipment. Two improvements in heavy duty cooking appliances were shown at this show for the first time.

The Standard Gas Equipment Corporation displayed their new style broiler and salamander, with improved built-in refractories for radiating heat to the steaks or chops being broiled. The intense heat generated confirmed the results obtained in tests, that this broiler was a material improvement over former types, and equalled the blast types of broilers now on the market, in speed and efficiency.

The Detroit-Michigan Stove Company showed for the first time their new heavy duty range, equipped with a thermostatically controlled hot top. Small protected gas jets indicated the relative quantities of gas being burned, when the top was operated with and without control, and the relative size of the jets indicated that considerable savings should be made by the adaptation of such controls.

Most visitors were impressed with the fact that this new attractive and improved gas cooking equipment represented a great improvement in performance and efficiency over that which is now generally installed in the hospitals of the country. Considerable progress has been made in Philadelphia in improving hospital equipment, as within the last year the local hospitals have installed a great number of new insulated and heat-controlled ranges and other gas kitchen equipment. It can now be said truthfully that gas is used for commercial cooking in all Philadelphia hospitals, and in view of this fact the showing of this new equipment was most timely.

Insurance Savings With Gas Heat

A SAVING of about \$300.00 a year in fire insurance premiums was reported to the Galt, Ontario, City Council recently by the finance committee, as a result of a change in the heating equipment for the dressing rooms in the skating arena.

Previously the dressing rooms had been heated by individual coal heaters but in view of a change to gas-fired circulating heaters, a premium surcharge was removed which reduced the rate to the normal one. The insurance company had regarded the old installation as a hazard.

The operating cost of the new gas heaters also is expected to be less because of the cost of coal for the old equipment and the labor required to tend fire and remove ashes. The investment in the new gas-fired installation was less than \$400.00 which will be more than saved by one year's premium reduction.

William Flood, sales representative of the Dominion Natural Gas Co. at Galt negotiated this transaction.

Your Move

"We are badly in need of men with technical knowledge who have the background of education to help solve the increasing problems of our industry—particularly those of production."

—JOHN B. TONKIN.

Where can one obtain this background of education? You'll find the answer in the new home study course on Natural Gas, prepared especially for those who are looking for larger opportunities.

The course embraces 27 lessons and covers all phases of natural gas operation. It has been prepared by the University of Kansas and the Natural Gas Department of the American Gas Association.

Enrollments are now being made. Write today for full information, addressing Kurwin R. Boyes, Secretary, A.G.A., 420 Lexington Avenue, New York, or University Extension Division, The University of Kansas, Lawrence, Kansas.

MANUFACTURERS' SECTION

JOHN A. FRY, Chairman J. SCOTT FOWLER, Vice-Chairman C. W. BERGHORN, Secretary MERRILL N. DAVIS, Vice-Chairman

Performance and Sale of Gas Arc Lamps

WHEN we were asked to write an article outlining our experience with the sale and performance of the new Humphrey super gas arc lamp, we were somewhat hesitant to put our opinion in writing because our experience has been very short and any opinion that we might offer could quite easily be misinterpreted or even be wrong in its entirety.

However, on the other hand, our own reactions to the wonderful performance of this new lamp are so enthusiastic that we felt that if our experiences were of any value whatever they should be passed on to the gas industry as a whole.

When these lamps were first brought to our attention, we were immediately impressed with the wonderful possibilities for substantial revenue increases and also the tremendous psychological effect it would have on our customers. We therefore welcomed this new development in lighting not only as a means to offset any negative feeling toward the gas industry, but also as a very definite medium by which to increase our revenues.

These new arc lamps burn between 60 and 70 cu.ft. of 550 B.t.u. gas per hour, so you can readily see if they are sold in quantities a very sizable revenue can be obtained. Our very short experience has shown us that in all-night filling stations, for example; a minimum of 15,000 cu.ft. per lamp per month is consumed. This consumption over a period of a year is therefore equal to a small house heating job over which we have all become enthusiastic and on which we have expended a great deal of effort and made very attractive rates to obtain, and we believe that this new volume of gas can be sold at a rate at least 40% higher than that necessary to procure house heating. We are giving to the public just exactly what they want and they are willing to pay for it.

Installations

To date we have made twelve installations, as follows:

Our own office.....	3 Lamps
7 Filling stations.....	18 Lamps
1 Coal office.....	1 Lamp
1 Tire shop.....	2 Lamps
1 Industrial	1 Lamp
1 Garage	1 Lamp

With one exception every customer is very enthusiastic about the performance of the new lamps. This one customer we now find should never have been sold in the first place because his gross monthly revenue from his business is too small to stand



Filling Station Equipped with Gas Arc Lamps

By J. FRANK JONES

Vice-President, Battle Creek Gas Company

any additional expense. This same customer is very enthusiastic about the lights and has admitted that it increased his night business from 10% to 15%, but even then his total business is very small.

This particular experience has taught us that we should not allow our enthusiasm to run away with our good judgment, and that we should be more careful where we place the lamps. In other words, we should make an analysis of the prospect's business and see if he can afford to pay a little more money for better illumination. If we feel that he can not, we should stay away from him.

After the first two or three installations in Battle Creek, we were literally besieged with inquiries regarding these lights, which indicates that the people do want better illumination and if their business is suf-

ficient to allow them to pay for it, it can easily be sold.

While this new lamp has been developed primarily for outdoor flood lighting, there is no reason why it can not be adapted to inside work by applying the same principal to low candle power lamps with distant control. By future development of different type reflectors it can also be used for flood lighting of sign boards. In fact we are now having some lamps built for us for this purpose.

Merchandising Plan

In looking about for places to install this lamp, you will find that the locations are almost inexhaustible. We have purposely chosen to work on filling stations first, as this business requires a large amount of illumination. Another splendid source will be used-car lots and public parking spaces. In our opinion there are sufficient prospects to keep us busy for a long time to come.



Night View of Filling Station

We have been asked on numerous occasions how we went about selling these lamps. There can, of course, be many ways in which to merchandise this new lamp and the policy that any company adopts would depend entirely on how badly they wanted the additional revenues and on how well they were sold on the possibilities of this new appliance. Here in Battle Creek we feel sufficiently sold on its possibilities that for the present time at least, we are offering the following plan to get lamps in use:

The customer to pay all installation charges for piping and wiring, we to furnish the lamp complete and to maintain it for as long as it is in use. We feel that we would be perfectly willing to sell this particular gas for as low as 60c per M; whereas the \$1 per M rate, which we are charging, gives us 40c per M sold to amortize the cost of the lamp itself and take care of the maintenance and service cost. We do not hesitate to tell the customer that his monthly bill for illumination will run a little higher, but we are giving him from three to ten times as much illumination and after all that is what he wants. We use as our slogan "*Make Your Building the Brightest Spot in Town*" and that is exactly what the new lights will do for your customer.

In reality we have done nothing unusual or spectacular. We believe that if you are really interested in the sale of these lamps, the first thing you have to do is to make an installation on your own office building. From that installation you will soon find ample prospects upon whom to work. We did, however, send out one letter to all the filling stations in Battle Creek, enclosing a piece of literature describing the lamp and stating that we had a very attractive proposition to offer. This particular piece of literature brought us a large number of inquiries.

Filling Station Experience

As all of you know, filling stations are very largely operated on a chain system and we have recently had an inquiry from one large system asking for bids to install lamps on all their stations in Battle Creek. Their thought was that if they were not as well lighted as some other stations they would lose considerable business. Their plan was to install the lamps in all the stations and then the licensee of the station was to pay for the gas consumed. As yet we have not received an order for the installation of these lamps.

I think that one of the factors prompting this particular company to seek a proposal from us was the fact that a large number of their lessees brought some pressure to bear on them, claiming that they were losing business to better lighted stations, so it seems to us that this is a splendid avenue of approach, i.e., we should contact the operators of all stations whether they are owned by individuals or chains. We have also had two district men from another large chain system here in Battle Creek looking over the lighting situation, but as yet they have not asked us for any

bid. We are continuing to work on their station operators, hoping in turn that more pressure will be brought to bear on the management.

We are watching our industrial installation with a great deal of interest. This installation is made in the oven room of one of our large food factories. The color of the food as it comes from the oven is the most important factor from a quality standpoint and it must be watched very closely by the oven attendant. A slight change in color necessitates throwing the food out entirely. Good illumination is just as important as the control of the heat on the oven and we feel that with the new lamp we have the answer to this problem. This installation has only been in a few days and it seems to be working much better than the old system. The only complaint we have received so far is that the oven attendants feel that they are getting too much light. If it develops this is so, it can be overcome by installing lower candle power lamps.

Performance

Now to tell you a little about the performance of those lamps which we have in operation. In the first place, care should be taken in the installation of these lamps to eliminate condensation as much as possible. As you all know, where gas piping is exposed to the elements condensation takes place almost immediately and provision must be made in this piping to take care of this so that supply lines will not become stopped with water, or worse still when cold weather sets in they will not frost up.

We find it necessary to go to every installation quite frequently and draw water from these lines. You can see from this

that servicing will be a factor that must be taken into consideration. However, should lamps be sold in sufficient quantity, provision can be made at our plant to remove the moisture through dehydration. This problem, of course, is eliminated on high pressure gas and natural gas.

In order to render good service to our customers it will be necessary to visit every installation at least once every two weeks, at which time the globe will be thoroughly cleaned and the mantles inspected. In cold weather it may be necessary to go to some jobs where there is a large amount of piping exposed oftener than this. On the other hand, we feel that we are well paid for this service.

In our work to date we have had very splendid cooperation from the manufacturer. We have found them more than willing at all times to advise and help us in every way they possibly can.

We realize that if we continue in the sale of this lamp in a big way, under our installation plan as outlined above, it will involve considerable expenditure of capital investment, but we believe that at the present time there is no other appliance that will bring us greater returns in the way of increased revenue for the money expended than will this new gas lamp.

It appears to us that the gross revenue received in two years will equal the total investment involved. This is more than the average return on most any other investment we could make.

In conclusion we would like to say that we are thoroughly convinced that this lamp has marvelous possibilities for the industry and unless something unforeseen turns up it is our intention to become increasingly active in the promotion of its use.

Gas Lighting Comeback

ENGLAND, where gas lighting has never been abandoned as in this country, has some rather pointed remarks to make in its new gas publication, "The Gas Times," on America's revival of interest in this field. Under the title "A Change in Tune," an editorial writer known as "Janus" has this to say:

"A year or two ago I publicly asserted that the American gas industry had blundered in letting the lighting load go. This brought a letter from an American gas man who declared that lighting was a dead issue in that country and that the gas industry over there felt strong enough to get along without it. That was before the days of acute depression, N.R.A., and all those other little matters which have made the American gas industry indulge in a bit of stocktaking."

"Well, there was your 'Janus' put on the shelf with the dead ones . . . a decrepit old dabbler in dead issues. Now look what has happened! The American gas press tells us that gas is out to stage a dramatic comeback in the lighting field—and all because the Grand Rapids Gas Light Company, trying to live up to its name, has used gas lamps for the external lighting of its head office building.

"Just a word about the installation: It consists of five new Humphrey lamps of, I should judge from the particulars given, about 3,000 c.p. They are two-mantle high-pressure lamps working from a low-pressure supply, the pressure being boosted by a small supercharger fixed in the base of each lamp. That is an idea worth noting. The installation was inaugurated to a fanfare of trumpets in the presence of a distinguished gathering which was told that . . . it opens an entirely new epoch in the field of outdoor lighting, and that it gives the gas industry an opportunity for a dramatic comeback in the field which we had considered entirely abandoned to our competitors." What I said when I read this piece of news is not to the point; but I did wonder what the American gas industry would stage if it had all the fine examples of gas lighting that we have over on this side, considering that it can plan to stage a comeback on five lamps."

TESTING LABORATORY

R. M. CONNER, Director

Managing Committee: J. S. DeHART, Jr., Chairman

N. T. SELLMAN, Secretary

New Approval and Listing Requirements Approved as American Standards

THE A. G. A. Laboratory's testing and certification program was further expanded recently by the completion and subsequent approval as American Standards by the American Standards Association, of five additional sets of A. G. A. requirements. This brings the number of gas appliance and accessory requirements now accorded recognition as American Standards to a total of seventeen, as follows:

American Standard Approval Requirements for Gas Ranges, Z21.1—1933.

American Standard Approval Requirements for Flexible Gas Tubing, Z21.2—1932.

American Standard Approval Requirements for Hotel and Restaurant Ranges, Z21.3—1932.

American Standard Approval Requirements for Private Garage Heaters, Z21.4—1932.

American Standard Approval Requirements for Clothes Dryers, Z21.5—1932.

American Standard Approval Requirements for Incinerators, Z21.6—1932.

American Standard Approval Requirements for Gas Heated Ironers, Z21.7—1932.

American Standard Requirements for Installation of Conversion Burners in House Heating and Water Heating Appliances, Z21.8—1933.

American Standard Approval Requirements for Hot Plates and Laundry Stoves, Z21.9—1933.

American Standard Approval Requirements for Gas Water Heaters, Z21.10—1933.

American Standard Approval Requirements for Gas Space Heaters, Z21.11—1933.

American Standard Listing Requirements for Draft Hoods, Z21.12—1933.

American Standard Approval Requirements for Central Heating Gas Appliances, Z21.13—1934.

American Standard Approval Requirements for Industrial Gas Boilers, Z21.14—1934.

American Standard Listing Requirements for Gas Burner Valves, Z21.15—1934.

American Standard Approval Requirements for Gas Unit Heaters, Z21.16—1934.

American Standard Listing Requirements for Gas Conversion Burners, Z21.17—1934.



Measuring Air Outlet Temperatures During Approval Test on Unit Heater

By F. R. WRIGHT

A. G. A. Testing Laboratory

It will be noted that the above standards cover practically every type of gas appliance used in the home as well as several types of appliances of a commercial nature. Included also are standards for certain types of gas appliance accessories and requirements for the installation of conversion burners.

Recent A. G. A. Requirements

In addition to the above, A. G. A. requirements were recently completed for other types of appliances and accessories as follows:

Approval Requirements for Gas Refrigerators.

Listing Requirements for Domestic Gas Appliance Pressure Regulators.

Listing Requirements for Automatic Devices to Prevent the Escape of Unburned Gas (Thermostatic Pilots).

Listing Requirements for Water Heater, Gas Range and Space Heater Thermostats.

Listing Requirements for Relief and Automatic Gas Shut-Off Valves for Water Heating Systems.

Listing Requirements for Automatic Main Gas-Control Valves.

Listing Requirements for Semi-Rigid Gas Appliance Tubing and Fittings are now practically completed by committees of the American Gas Association and will round out the series of standards for gas consuming appliances and equipment so as to essentially cover the entire field. Facilities are now available at both the Testing Laboratory in Cleveland and at the Pacific Coast Branch in Los Angeles to test appliances and accessories for approval or listing as the case may be, for compliance with any of the above mentioned standards.

Heretofore, the Association has not been able to accord recognition to gas refrigerators, industrial gas boilers, gas conversion burners, gas burner valves, thermostats, relief valves, thermostatic pilots, gas pressure regulators, electric gas control valves and diaphragm valves due to the fact that there were no published standards available for such equipment. With the completion of the above mentioned approval and listing requirements, such appliances and accessories may now be submitted to the Laboratory and be subjected to careful and thorough examination and tests in accordance with published standards developed by the best minds within the gas industry and interested cooperating organizations and governmental agencies.

The Laboratory in the past, has approved certain accessories as a part of complete gas burning appliances when they were supplied on such appliances submitted for approval. The tests applied to such accessories, however, were not nearly so extensive as those included in the listing standards and the approval of the accessory as a part of the appliance would not carry recognition to such devices when installed in a different manner, or attached to another appliance.

Program Expansion

Unquestionably, the expansion of the Laboratory's testing and certification program as a result of the application of the new listing standards will not only greatly benefit manufacturers of such equipment by assisting them in the development of their products and giving them a sales advantage which they were never before afforded, but will serve to eliminate to a substantial degree, many troubles heretofore encountered by gas companies in the servicing and maintenance of equipment. It will give the public greater value for the money expended in the purchase of gas appliances and should assure even greater satisfaction on the part of the consumer in the use of gas for domestic and commercial purposes. It may be expected that state and local regulatory bodies will be glad to have American Standards for all such types of equipment to serve as a guide in the adoption and enforcement of any statutes and ordinances which they may enact.

A brief discussion of the character of the five sets of standards recently approved by the American Standards Association (Z21.13—1934 to Z21.17—1934 inclusive) may be of interest.

The new requirements for industrial gas boilers, distinguished from those covered by the approval requirements for central heating gas appliances, apply to small boilers used for commercial purposes and are limited to those having output capacities of not more than ten boiler horsepower. These standards, like all others, are divided into construction and performance requirements covering every



Testing Industrial Gas Boilers During Development of Requirements

detail of design and construction, performance and operation essential to their rendering safe, efficient, durable and satisfactory service when properly installed and adjusted. The only other requirements available which approach these standards in completeness are those of the American Society of Mechanical Engineers which do not include any performance requirements nor constructional requirements applying to gas boilers in particular.

Unit Heaters

Like the requirements for industrial gas boilers, the new standards for unit heaters apply to appliances of a commercial nature. Previously, requirements for unit heaters were included as a part of the standards for central heating gas appliances. Recognizing, however, that such equipment was in a class somewhat different from domestic boilers and furnaces, a new committee of the Association was organized several years ago to take over the matter of revising the original requirements for unit heaters and expanding them in line with recent developments in this field. The accompanying photograph shows a unit heater under test for approval at the Association's Laboratory in Cleveland.

It is felt that the Laboratory's testing and certification program applying to central heating gas appliances has been no small factor in the progress made by our industry in recent years in the sale of gas for house heating purposes. As of October 1, 1934, 2,200 boilers, basement furnaces and floor furnaces had been accorded approval by the A.G.A. Testing Laboratory.

The revised requirements for such appliances, which were recently approved as American Standard are much more comprehensive than those previously applied. This has been brought about to a large extent by the progress and developments made in the design and construction of such equipment during the past few years. In accordance with the Association's policy, approval and listing requirements are revised periodically by the standing committees charged with the development and revision of standards to make them more rigid and complete as developments in the art of manufacturing and the needs of the industry require.

Central Heating Appliances

The revised standards for central heating gas appliances, like those for industrial gas boilers and gas unit heaters become effective on January 1, 1935. In accordance with the policy adopted by the American Gas Association early this year, central heating gas appliances including boilers, basement furnaces and floor furnaces, approved by the Testing Laboratory before January 1, 1931, must comply with the newly revised requirements on or before January 1, 1936 in order for approval to be continued on them after that date. This will in some cases require partial retests on appliances, while probably in many cases the necessary changes in the appliances to meet the latest standards can be reviewed by our inspector in the plants of the manufacturers without the necessity of Laboratory tests. Just what tests, if any, will be necessary in each individual case, however, cannot be determined without careful analysis of the test data on file at the Laboratory after reviewing the changes made in the appliance by the manufacturer.



View of Central Heating Gas Appliance Section

Developments of recent years have opened a wide field for the use of gas conversion burners. House heating campaigns and the installation of thousands of these units in nearly every large city as well as numerous smaller communities, resulted in demands by utilities, dealers and others, for A. G. A. requirements covering equipment of this character.

Testing Conversion Burners

While many of the larger gas companies had laboratory facilities available for testing conversion burners, the absence of construction and performance standards was a considerable handicap to them in the selection of proper equipment. Furthermore, the necessity of each gas company testing all available conversion burners, coupled with the absence of recognized standards, pointed to the desirability of having such equipment tested and certified by a central laboratory such as that of the American Gas Association. In addition to this fact, smaller gas companies usually would not have the facilities for making extensive tests, and, therefore, had no yardstick for determining the most acceptable and satisfactory burners for their local use. It was recognized by the Association that probably the installation of conversion burners was the most important problem and the one that should be solved first. For that reason, requirements for the installation of such equipment were completed in 1932 and approved as American Standard by the American Standards Association early in 1933.

After completing those standards, Laboratory construction and performance requirements for the burners themselves were developed and approved as American Standard on August 13, 1934. It is gratifying to report that one manufacturer has already submitted some of his equipment and had it tested and listed under the new requirements for conversion burners. Burners from many other manufacturers are also at present awaiting tests at the Cleveland Laboratory. Burners which meet the listing requirements are entitled to bear the Laboratory's listing symbol which is comprised of the letters "AGA." Tests and certification of burners under these requirements and their installation in accordance with the American Standard requirements for the installation of conversion burners in house heating and water heating appliances will give assurance that the heating system will not only operate safely but will give efficient performance and satisfactory operation.

Gas Burner Valves

The recently completed American Standard Listing Requirements for Gas Burner Valves satisfy a long recognized need for maintaining the general quality of these accessories and for aiding the manufacturers in standardizing their products and correlating them with the needs of the appliance manufacturers. These require-

ments cover completely the design, construction, performance, and operation of gas burner valves or gas cocks. Not only do the construction requirements cover such things as handles, stocks, dimensions, compensation for wear, materials and assembly, but include several recommended designs for valves and valve parts.

The performance specifications include tests for leakage, capacity and continued operation before and after heating. The last mentioned tests are in the nature of accelerated life or service tests designed to determine whether the valves will stand up under various conditions of heating such as they might be subjected to on an appliance over a period of approximately 15 years. Several years of research and a background of experience with gas burner valves, not only by the Laboratory, but by appliance and burner valve manufacturers and gas utility companies, have contributed to the preparation of these requirements by the Association's committees.

Governmental agencies, health authorities, interested technical societies and other individuals and organizations, in addition to members of the American and Canadian Gas Associations, have actively participated in the preparation of these requirements as in all other standards developed and published by the American Gas Association. Several burner valve manufacturers have already submitted their equipment to the Cleveland Laboratory for testing and listing under these requirements and one manufacturer's product appears in the October 1 "Dictionary of Approved Appliances and Listed Accessories."

Information regarding the testing of appliances and accessories and copies of any of the above mentioned standards may be secured by communicating with the Director of the American Gas Association Testing Laboratory, 1032 East 62nd Street, Cleveland, Ohio. Copies of requirements may also be secured from the Pacific Coast Branch, 718 Towne Avenue, Los Angeles, California, or from the American Gas Association, 420 Lexington Avenue, New York City. Requirements approved as American Standard may be also secured from the American Standards Association, 29 West 39th Street, New York, N. Y.

D. H. Mitchell Advanced

DEAN H. MITCHELL, vice-president and controller of the Northern Indiana Public Service Co., was named senior vice-president and general manager of the company by John Shannahan, chairman, on October 15. He succeeds Morse DellPlain who resigned as president to become vice-president of the Welsbach Street Lighting Co. of America, and H. H. Adams, who resigned as vice-president and general manager.

It was announced also that George Rooker had been placed in charge of the Gary Heat, Light and Water Co., succeeding Mr. DellPlain.

Dr. Rice Dies

DR. CALVIN W. RICE, for twenty-eight years secretary of the American Society of Mechanical Engineers, died October 2.

Heads Boston Home Service

MRS. MARGARET P. FOSSETT has been chosen director of the Home Service Department of the Boston Consolidated Gas Co., succeeding Miss Ruth Feeney. Miss Fossett has been a member of the Home Service Department for the last eight years. She received her domestic science training at Simmons College.

House Heating Report Available

THE House Heating Committee Report for 1934 is now available, according to C. A. Nash, committee chairman. This report contains a list of the numerous Interim Bulletins prepared by the committee during the past year and distributed by the American Gas Association. In addition, the report carries a bibliography of house heating articles appearing in the various trade publications and also the annual statistical summary of gas house heating activities of manufactured and natural gas companies compiled by the Statistical Department of the Association.

A survey made by the American Engineering Council showing the distribution of engineers among the main industrial groups, released October 2, demonstrates that the public utilities are at the top of the list of all industries, with 3.51 per cent of its employees professional engineers.

Attention, yardstick wielders!—Consumers of electricity in Danville, Va., are petitioning for relief against rates charged by the city owned and operated plant, as higher than those charged by private companies in Lynchburg, Va., Greensboro, N. C., and other near-by cities.

At the annual meeting of the Electric Bond and Share System, October 10, C. E. Groesbeck, Chairman, announced that sales of gas appliances by the operating companies were \$1,300,000 greater than a year ago.

Monthly Summary of Gas Company Statistics

For Month of August, 1934

Issued October, 1934, by the Statistical Department of the American Gas Association
420 Lexington Avenue, New York, N. Y.

PAUL RYAN, Chief Statistician

COMPARATIVE DATA ON THE MANUFACTURED AND NATURAL GAS INDUSTRY FOR THE MONTH OF AUGUST

	Month of August			Eight Months Ending August 31		
	1934	1933	Per Cent Change	1934	1933	Per Cent Change
<i>Customers</i>						
Domestic (Including House Heating).....	14,750,400	14,380,900	+ 2.6			
Industrial and Commercial.....	729,200	712,200	+ 2.4			
Total	15,479,600	15,093,100	+ 2.6			
<i>Revenue (Dollars)</i>						
Domestic (Including House Heating).....	31,572,700	31,986,200	- 1.3	346,327,000	348,721,400	- 0.7
Industrial and Commercial.....	13,595,400	12,712,800	+ 6.9	123,832,900	109,194,600	+ 13.4
Total	45,168,100	44,699,000	+ 1.0	470,159,900	457,916,000	+ 2.7

COMPARATIVE DATA ON THE MANUFACTURED GAS INDUSTRY FOR THE MONTH OF AUGUST

	Month of August			Eight Months Ending August 31		
	1934	1933	Per Cent Change	1934	1933	Per Cent Change
<i>Customers</i>						
Domestic	9,473,500	9,329,400	+ 1.5			
House Heating.....	88,500	43,700	-			
Industrial and Commercial.....	441,900	438,200	+ 0.8			
Miscellaneous	9,900	7,900	-			
Total	10,013,800	9,819,200	+ 1.9			
<i>Gas Sales (MCF)</i>						
Domestic	17,607,100	18,029,500	- 2.3	160,946,700	162,370,400	- 0.9
House Heating.....	273,600	176,000	+ 55.5	20,256,500	13,556,300	+ 49.4
Industrial and Commercial.....	6,845,900	6,067,100	+ 12.8	58,701,600	48,734,300	+ 20.5
Miscellaneous	135,300	133,900	-	1,417,000	1,345,000	-
Total	24,861,900	24,406,500	+ 1.9	241,321,800	226,006,000	+ 6.8
<i>Revenue (Dollars)</i>						
Domestic	22,016,900	22,487,300	- 2.1	195,973,600	199,027,200	- 1.5
House Heating.....	256,400	161,500	+ 58.8	13,300,200	9,779,400	+ 36.0
Industrial and Commercial.....	5,088,000	5,015,900	+ 1.4	45,171,000	42,824,100	+ 5.3
Miscellaneous	109,000	99,400	-	1,004,300	1,024,800	-
Total	27,470,300	27,764,100	- 1.1	255,449,100	252,655,500	+ 1.1

COMPARATIVE DATA ON THE NATURAL GAS INDUSTRY FOR THE MONTH OF AUGUST

	Month of August			Eight Months Ending August 31		
	1934	1933	Per Cent Change	1934	1933	Per Cent Change
<i>Customers</i>						
Domestic (Including House Heating).....	5,188,400	5,007,800	+ 3.6			
Commercial	253,700	244,300	+ 3.8			
Industrial	22,100	20,400	+ 8.3			
Miscellaneous	1,600	1,400	-			
Total	5,465,800	5,273,900	+ 3.6			
<i>Gas Sales (MCF)</i>						
Domestic (Including House Heating).....	10,330,900	10,296,400	+ 0.3	203,109,000	205,137,400	- 1.0
Commercial	2,305,700	2,197,200	+ 4.9	38,273,400	36,707,500	+ 4.3
Industrial	44,954,500	39,235,200	+14.6	369,672,000	294,877,700	+25.4
Miscellaneous	1,026,800	645,600	-	8,135,400	5,261,500	-
Total	58,617,900	52,374,400	+11.9	619,189,800	541,984,100	+14.2
<i>Revenue (Dollars)</i>						
Domestic (Including House Heating).....	9,299,400	9,337,400	- 0.4	137,053,200	139,914,800	- 2.0
Commercial	1,209,000	1,194,100	+ 1.2	17,348,100	16,914,400	+ 2.6
Industrial	7,042,500	6,300,500	+11.8	59,004,400	47,499,800	+24.2
Miscellaneous	146,900	102,900	-	1,305,100	931,500	-
Total	17,697,800	16,934,900	+ 4.5	214,710,800	205,260,500	+ 4.6

August Gas Revenues Increase 1 Per Cent

REVENUES of the manufactured and natural gas industry aggregated \$45,168,100 in August 1934, as compared with \$44,699,000 in August 1933, an increase of 1 per cent.

The manufactured gas industry reported revenues of \$27,470,300 for the month, a decrease of 1.1 per cent over the corresponding month a year ago, while revenues of the natural gas industry totalled \$17,697,800 or 4.5 per cent more than for August 1933.

Sales of manufactured gas reported for August amounted to 24,861,900,000 cubic feet, an increase of 1.9 per cent. Natural gas sales for the month were 58,617,900,000 cubic feet, an increase of 11.9 per cent.

On August 31, the number of domestic customers served by the manufactured and natural gas companies totalled 14,750,400. This was an increase of 277,000 domestic customers during the eight month interval.

This gain in customers is reflected in the fact that a total of 540,000 gas ranges were sold in the country during the first eight months of 1934. This was an increase of 26 per cent in range sales over the first eight months of 1933. Approximately 73 per cent of such sales consisted of relatively high priced ranges, incorporating modern automatic features, such as oven-heat control, etc.

For the eight months ending August 31 manufactured gas industry revenues aggregated \$255,499,100, an increase of 1.1 per cent over the corresponding period of a year ago, while revenues of the natural gas industry were \$214,710,800 or 4.6 per cent above last year.

STANDBY GAS

(Continued from page 396)

High Heating Value Oil Gas as Standby for Natural Gas, J. A. Harritt, Frank Wills and Leon J. Willien. Western Gas, August 1932. Proceedings for 1932. Pacific Coast Gas Association.

Standby Apparatus for Peak Load Equipment, E. W. Galloway. Mid-West Gas School & Conference, Iowa State College, Ames, Iowa, December 1932.

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Gas Plants as Standby for Natural Gas Transmission Lines, Frank Wills. A. G. A. Proceedings 1933. Natural Gas Department. Gas Age-Record, October 14, 1933.

The Recirculated Oil Gas Process, E. S. Pettyjohn. A. G. A. Monthly, August 1933. A. G. A. Proceedings 1933, Report of Water Gas Committee.

The Tornquist Heat Balance Process for Producing High B.t.u. Water Gas, E. A. Disterle. A. G. A. Proceedings 1933, Report of Water Gas Committee.

Production of High B.t.u. Carburetted Water Gas, H. B. Young. A. G. A. Proceedings 1933, Report of Water Gas Committee.

Some Comparisons of 200 B.t.u. Water Gas with 530 B.t.u. Gas, K. B. Nagler. A. G. A. Proceedings 1933, Report of Water Gas Committee.

Report Concerning Experiments in the Manufacture of a High B.t.u. Gas in a Standard Water Gas Set to Serve as a Substitute for Natural Gas in Case of an Emergency or for Mixing with Natural Gas during Peak Loads, D. L. Sedgwick, W. E. Steinwedell, H. J. Carbon, E. L. Fischer. A. G. A. Proceedings 1933, Report of Water Gas Committee.

Report of Natural Gas Standby Committee of Pacific Coast Gas Association, Frank Wills, T. N. Kellett, J. A. Harritt. Western Gas, September 1933. Proceedings of Pacific Coast Gas Association 1933.

Production and Utilization of High Heating Value Diesel Oil Gas, Los Angeles Gas & Electric Corporation. Proceedings of Pacific Coast Gas Association 1933.

Emergency Gas Plant Operation at Denver, E. H. Hoover. Gas Age-Record, October 14, 1933.

Substitute Gas for Emergency and Peak Loads, A. C. Rathkey. Mid-West Gas School & Conference, Iowa State College, Ames, Iowa, November 1933.

Production of High B.t.u. Gas in Existing Water Gas Equipment, Leon J. Willien. Gas Age-Record, November 4, 1933.

Progress Summary on Production of Substitute Gas, George Wehrle. Western Gas, December 1933.

The Mixing of Natural Gas and Manufactured Gas and the Replacement of Natural Gas by Manufactured Gas, J. A. Perry. Mid-West Gas Association 1934.

Development of a Substitute Gas for Natural Gas, Henry O. Loebell. American Gas Journal, May 1934, p. 59.

High B.t.u. Gas as a Standby by H. B. Young and D. M. Workman. A. G. A. Gas Production and Chemical Conference, May 21-22, 1934.

Remodeling the Memphis Plant for Standby Service, W. A. Dunkley. Western Gas, June 1934, p. 10.

Butane as Standby for Mixed Gas, O. R. Allgeier, Engineer, The St. Louis County Gas Company, Webster Groves, Mo. Western Gas, July 1933, p. 22.

INTERNATIONAL GAS CONFERENCE

(Continued from page 388)

rate making. Here is another matter which is topical on this side. Recognizing the importance of the subject, the American Gas Association, almost since its formation, has had two strong and active Committees on Rates, and during the past twelve years these committees have issued a number of reports, which can be described as coordinated rate making. See what has been accomplished. In 1925 the number of manufactured gas rate schedules analyzed was 1,122 and the percentage of schedules giving recognition to recommended principles of rate structure was 28.3; in 1933, the respective figures were 2,607 and 60.3."

ELECTRIC COMPETITION

(Continued from page 400)

alone, but must have the active and energetic support of the manufacturers of gas appliances to offset the tremendous publicity of the electric appliance manufacturers.

At the present time, there is no coordinated activity in the gas industry. Such coordination is more necessary now than at any time in the history of the gas business. This new Government-sponsored electric competition is a real threat to the industry that will require the greatest of our initiative, our resources and cooperation to meet.

HOUSING PROGRAM

(Continued from page 392)

zation and effort which has been adopted. All cooperating appliance dealers provided with copies of National Housing Act with letter explaining act and urging them to canvass customers. Pamphlet "What Can You Do with Your Property Modernization Loan" sent to all dealers, salesmen, employees, residents, builders, owners of apartment houses and architects in service area. Pamphlet suggests customers phone company for additional information, giving special extension number, manned by operators specially trained in Housing Program.

Modernization program promoted in all newspaper advertising, window and floor displays and bill stuffers. Dealers supplied with housing placards similar to those in company branch offices. Cooperating plumber dealers and department stores meeting with increasing appliance sales in connection with this plan.

Columbia Fuel Course

The graduate course in gas and fuel technology known as "Chemical Engineering 165" which, for some years past, has been a valuable and much appreciated feature in this field, is again being offered by the Department of Chemical Engineering at Columbia University under the able direction of Professor Jerome J. Morgan, well-known author of "American Gas Practice" and one of the country's outstanding authorities in gas engineering.

Appliance Sales Increase

SEPTEMBER proved to be a banner month for the new business departments of The Gas Service Company, Kansas City, Mo. There was more business obtained during the month of September than for any month of the year and it proved to be the biggest month the departments have had in point of sales since October, 1933. It was also the best month of September since 1931.

Total gross appliance sales for the month amounted to approximately \$125,000 and preliminary reports indicate that the sale of appliances installed will be approximately \$118,000. For the month a total of 587 central heating appliances were sold including 277 conversion burners, 77 gas designed furnaces or boilers and 285 large size space heaters. Besides the large size heating equipment added to the lines there was a total of 364 radiant-fire heaters sold during the month.

Personnel Service

SERVICES OFFERED

Gas engineer (39). Recently manager of small company. Experienced water gas and coke oven operator. Fifteen years' experience in natural gas measurement, distribution and industrial uses, in public relations, rate structures and promotion and sale of all types of gas appliances. **887.**

Manager-engineer; thirty years' experience design and construction of plants, distribution systems and transmission lines. Organization, operation, management, sales, engineering, valuations, coal water and natural gas, also electricity. Recent experience with heavy oil for water gas and high B.t.u. gas to supplement natural gas. **892.**

Successful Industrial Gas Engineer desires position where a large potential market awaits progressive efforts and where results will be rewarded. Twenty-three years' experience Natural and Manufactured gas. Thorough knowledge all phases industrial applications, from steam boiler to steel mills. **895.**

Mechanical Engineer, college graduate, 8 years' experience H.P. and L.P. distribution, water and coal gas production, appliance servicing, natural gas changeover. Desires position as superintendent or manager. Married. Location immaterial. **896.**

Industrial Sales Engineer desires employment with Eastern Utility. Specialized in Sales Management, Service and Maintenance of House Heating Department, Industrial Steam Boilers and Large Volume Water Heating. Broad experience. Married. **897.**

Engineer, now employed offers manufacturer or utility ten years' experience all phases of heating and air-conditioning; designing, manufacturing, patents. Background 7 years technical college faculty, national society committee activities, writing, and speaking; wide acquaintance in the industry. **898.**

Man of wide business experience, **sales engineer** prominent gas company. Services available November first. For several years official large contracting companies. Six years purchasing agent important manufacturing corporation. Five years executive secretary national trade association. Highest references. No preference as to place of residence. **901.**

Commercial Manager with tact, vision, creativeness, resourcefulness and "punch"; unusually successful record as load builder; broad experience with progressive organizations U.S. and Canada supervising domestic and industrial sales, developing economics, analysing and allocating costs, designing rates, handling advertising, publicity, franchises, State Commission and public relations. Highest credentials. **902.**

Sales Engineer, one of the pioneers of gas House-heating sales with a background of gas plant operation. Have also had industrial sales, summer air conditioning, sales promotion and dealer relations experience. Prefer eastern states. Married. **903.**

Experienced gas appliance salesman (28), married, with good education, is desirous of locating with a public utility as sales supervisor or as district representative for a manufacturer. Have had experience in both ends. Prefer eastern states, but will go anywhere. Can furnish best of references. **904.**

Young energetic, **technical graduate** (29) (R.S. and M.S. in Mech. Engr.), with four years' utilization, distribution and construction experience with large natural gas system; married. **905.**

Sales Manager and Salesman wants responsible selling job. 12 years' successful selling, sales promotion and advertising with specialty manufacturers. County-wide contacts leading jobbers and gas companies. Familiar with fittings, plumbing and heating appliances. College man in prime, clean record, energetic, eager, resourceful, accustomed to large volume business. **906.**

Experienced **Sales Representative** (36). Past eight years' experience representative in metropolitan area of two largest range manufacturers, including special promotional work as assistant director sales education; good record and contacts. Desires connection with manufacturer of appliances or as commercial manager of a utility company. **907.**

SERVICES OFFERED

Experienced **gas range engineering executive** wishes to affiliate with reliable manufacturer. Capable of taking complete charge of design and experimental, laboratory departments, factory methods and correcting production problems. **908.**

Utilization and Sales Engineer acquainted with Gas Companies, Heating Engineers, Architects, Builders and Plumbers in metropolitan area. Long experience in househeating, waterheating, industrial and restaurant appliances. Is qualified to head a department for a gas company or would represent a manufacturer in New York City. **909.**

Gas Appliance Salesman with ability to organize selling force, supervise, create selling plans and methods and conduct any territory in a judicious manner. Conversant with methods used in contracting wholesale and retail trade, also utility companies. **910.**

Manager customer and trade relations or rate work. Combination plant experience includes problems of regulation cooperation other companies and industries and problems of competition. **911.**

Industrial Gas Sales Representative (43). Adjusting, repairing, designing and selling appliances and burners to every industry. Manufacturer and gas utility experience, domestic and industrial. Married. **912.**

Engineer, broad experience in production, distribution, accounting and management; analysis distribution systems and preparation immediate or future extensions; making and testifying to inventories and valuations in rate and tax cases. Qualified install continuous inventory. **913.**

Salesman, electrical products (30), married, graduate electrical trade school. Eight years' experience New York City selling electrical appliances, specialties and material to industrials, public utilities, chain and department stores, realty companies, banks, jobbers and retailers. Also experienced sales promotion and missionary work and handling sales correspondence. **914.**

Gas Engineer or Superintendent, college graduate, thoroughly experienced in the gas industry, including coal, water and oven gas manufacture, natural gas conversion work, pipe line construction, maintenance and metering, high- and low-pressure distribution, also selling, installing and maintenance of house heating equipment. **915.**

Gas Engineer, 20 years' practical experience in all branches—manufactured and natural gas—holding company experience—highly successful in improving operating and distribution conditions. Recognized expert in federal court and commissions on appraisals and gas company operations. **917.**

Graduate Engineer with eight years' experience in Public Utility operation and financing. Operating experience in all types of manufactured and natural gas, electric, water, and ice companies. Financial experience in organization of new and reorganization of old companies. Also familiar with marketing of Public Utility securities. **918.**

Junior Statistician, 10 years' experience public utilities. Versed in statistical routine, special reports, unit costs, special studies, preparation of forms in reporting or summarizing balance sheet, operating revenue and operating expense items, graphical presentation of results, reports for trade associations, Federal Trade Commission, etc. **919.**

Executive Manager (39). Technically trained university man; 18 years' experience available due consolidation of gas & electric properties. Broad experience, covering all phases of industry. Especial attention to Sales Promotion & Public Relations. **920.**

Exceptional experience as **Key Man** to executives suggests there is a similar position where knowledge of controlling corporate, financial, and legal requirements of corporations of different states, together with security sales promotion, modern budgets and statistical interpretation has a place. Can fully substantiate above at interview. **921.**

Personnel Director with deep convictions on value of public relations and employee's education, believing that a correctly informed public is a friendly public, that better trained employees insure stability and profits; all possible with low overhead. Have had ten years' experience in one of America's largest utilities. Good references. **922.**

SERVICES OFFERED

Accountant-Auditor, twenty years' diversified experience, home and abroad, on gas and oil, railways, foundries, sugar mills, general construction and bus transportation; five years last position handling consolidations, mergers and reorganization. Good personality, speaks and writes Spanish fluently. **923.**

Salesman thoroughly seasoned in domestic and industrial appliances, with refrigeration a specialty, seek connection eastern or midwest company. Fourteen years' experience all phases of appliance merchandizing—cold canvass, new business manager—advertising—cooking schools, married (38). **924.**

Young (24) wide awake, conscientious and ambitious. Five years' experience in analysis of utility operations, including sales and promotional activities plus three years' university training in advertising. Should fit well in advertising department of operating company, holding company, or manufacturer advertising agency. Single. **925.**

Salesman (35) 14 years' appliance experience with a background of both utility merchandising and manufacturer representative of ranges and space heater experience. Wishes to connect with reputable manufacturer to contact utility and dealer trade; well acquainted with Midwest. **926.**

General Office Worker (37) principally pay roll preparation, auditing and paymaster with large industrial organizations. Now employed and studying accounting at university night course; seeks change. **927.**

Executive engineer-accountant and commercial sales manager desires connection. Thorough experience with all branches of utility operation and new business promotion. Good public relations experience. Location no object. Thorough statistician—accountant. **928.**

POSITIONS OPEN

Manufacturer well-known line of automatic temperature, pressure and flow controls used for domestic, commercial and industrial purposes is desirous of obtaining **Manufacturer Distributors** in a number of eastern and midwestern states. Prefer man or organization, control minded and contacts public utilities and heating contractors. Must have best references. Straight commission. **925.**

A manufacturer of one of America's finest and most complete lines of automatic water heaters doing an exceptional business in all territories covered is desirous of increasing field representation, preferably among representatives selling utilities now carrying other non-competitive lines. These water heaters offer manufacturers maintaining sales organizations an opportunity to bolster the earnings of their men with little or no effort detracted from present line. Increased commission builds morale and makes it possible to put forth effort in territories where single lines may not justify. **927.**

Sales Representatives wanted. A large manufacturer of gas fired water heaters for over 20 years desires representation in Atlantic Coast and Southern States territory. Prefer those who are now representing other lines of gas appliances or lines in which a water heater will fit in successfully. Please give complete information in your application. **928.**

THE CONVENTION IN RETROSPECT

For the departments, the sections, the committees general and sectional, a year of coordinated effort; for the exhibitor-manufacturers three years of design, development and production of new equipment. In the aggregate an inspiring demonstration of accomplishment and faith in the assured destiny of a great industry. Having paused briefly to take counsel together and having consolidated positions under competitive attack, the industry renews its forward march. Time and attrition inevitably call for replacements; trained and experienced personnel is ready and waiting.

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